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Editor's Choice

The ORION, the past and future

The ORION started the mission of supporting the CME (Continuous Medical Education) of the physician community back in September 1998 (volume-1) with a strong vow of providing the latest medical information. We are relentlessly on our voyage towards the goal of achieving national and international acceptance and recognitions.

The inaugural issue and some of the subsequent issues (Vol. 1 to 5) had focus on a single topic. From 6th issue (May 2000), the journal was turned into a multidisciplinary one. The journal earned ISSN number (ISSN 1606- 9722) from its 7th issue (September 2000).

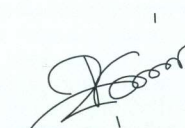
The international attachment and formation of the Advisory Board and the Review Board has made the journal more enriched from volume-7 (September 2000). Continuous advice, suggestions and support of the members of the Advisory Board and the Review Board make the publication more delightful to read. Continual guidance of the Consulting Editor and the Guest Editor help to enlighten the scientific values of the journal.

From this issue, we have introduced some changes like indexing of the cover page, addition of the scientific letter and redesigning of the editorial to make the journal more scientific like any other international medical journals. The journal has also incorporated new topics on mental health and anesthesia, analgesia & intensive care medicine. We are happy to announce that Prof. Dr. AH Mohammad Firoz and Prof. Dr. Kazi Mesbahuddin Iqbal have given their kind consent to be one of the members of the Review Board and the Advisory Board of the journal respectively.

Now, The ORION is looking forward to having further recognition from different national and international scientific bodies and also to establish itself as a partner of the physician community in their endeavor to serve the ailing humanity. The opinions and suggestions of the readers are always appreciated to make the journal richer day by day.

May the Almighty bless all in the spirit of good health.

The ORION wishes all a very happy and prosperous New Year-2003.



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Zinc and child health

Roy S K¹, Ireen S²

The Orion 2003; 14 : 34

Zinc deficiency is a common public health problem, with nearly half of the world's population at risk of inadequate zinc intake. The malnourished children have been identified as zinc deficient in Bangladesh and other developing countries¹. Zinc deficiency is associated with impaired immunity, growth retardation, and hypogeusia² and causes diarrhoea in experimental animals³. Morphological studies have shown that zinc supplementation improves the structure of the intestinal mucosa in zinc deficient animals as well as in the patients with acrodermatitis enteropathica^{4,5}. It has been estimated that diarrhoeal diseases cause about 3 million deaths of children in the developing countries each year and causes malnutrition in surviving children.

High amount of zinc such as 270 µg/kg/day has been reported to be lost through stool during persistent diarrhoea in Bangladeshi children⁷. In Bangladesh the overall diarrhoeal incidence rate is 3-4 episodes per child per year⁸ and about 9% of the acute diarrhoeal episodes become persistent in this country⁹. A significant proportion of children who suffer from diarrhoea are malnourished which may further contribute to increased severity and duration of diarrhoea in such children. Studies conducted in Bangladesh have shown that supplementation of 20 mg elemental zinc/day for two weeks during acute¹⁰ and persistent¹¹ diarrhoea reduced diarrhoeal duration (14%, P=NS and 33%, P<0.03 respectively) and stool out put in malnourished children. Zinc supplementation significantly reduced diarrhoeal duration (22%, P<0.04) and median stool weight (279 vs. 326 g/kg, P<0.04) in children with a lower serum zinc (<14 µmol/l) with acute diarrhoea¹⁰. Zinc supplemented children with acute diarrhoea gained weight (P=0.03)¹⁰ and children with persistent diarrhoea maintained their body weight and serum zinc level whereas there was a reduction in both body weight (P<0.05) and serum zinc level (P<0.03) in the un-supplemented group during hospitalization¹¹. Studies from India showed that supplementation of 40 mg elemental zinc/kg/day resulted in significantly shorter duration of diarrhoea (P<0.0001), zinc supplemented children passed less liquid stool (P<0.0001), consumed less ORS (P<0.0001) and other liquids (P<0.0001) compared to the placebo group¹². Roy et al. have found that supplementation of 30 mg elemental zinc/day for 7 days in children with cholera, significantly reduced duration of recovery (14%, P=0.03) and stool out put (26%, P=0.03) and body weight of zinc supplemented children increased (P=0.05) significantly than the control group¹³.

Studies have also shown that zinc supplementation has residual benefits beyond the acute stage of diarrhoea. Zinc supplemented malnourished Bangladeshi children (W/A <70% of NCHS standard) with acute¹⁴ and persistent¹⁵ diarrhoea had 30% (P<0.05) and 24% (P<0.03) greater length gain during 8 weeks and 3 months of follow up respectively after diarrhoea. Zinc supplemented children with persistent diarrhoea also experienced fewer diarrhoeal attack (P<0.05)¹⁵. Studies in Bangladesh and elsewhere have shown that zinc supplementation reduced the incidence of diarrhoea and acute lower respiratory tract infection¹⁶. Hospitalization of children with diarrhoea was also lower in the zinc supplementation group¹⁶. The non-injury death rate was 51% lower in the zinc supplementation group¹⁶. Death in children with persistent diarrhoea was one fifth in zinc group compared to controls¹⁵. A

randomized trial from India found a large reduction in overall mortality in infants who were small for gestational age and supplemented with zinc from 1 to 3 years of age¹⁷.

Results of studies suggest that zinc supplementation may provide significant clinical, nutritional and immunological benefits to children during and after the episodes of acute and persistent diarrhoea and cholera. The mechanism through which zinc may influence diarrhoeal episodes or intestinal function include improved electrolyte transport¹⁸, early epithelial regeneration^{2,19}, rapid synthesis of digestive enzymes^{20,21}, improving intestinal permeability²², reduction in osmotic diarrhoea and improvement in immunity²³ limiting bacterial overgrowth and early clearance of intestinal pathogens. Moreover zinc used as a treatment for diarrhoea reduces mortality in children. The impact of zinc on mortality and morbidity can be achieved in a realistic large-scale public health program. Strategies for the alleviation of zinc deficiency include dietary diversification or modification, supplementation, along with general health program to reduce infections that contribute to poor absorption or excess loss of zinc.

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Assisted reproductive technologies (ART) : A new approach in Bangladesh

The Orion 2003; 14 : 35-36 Fatima P¹, Hossain M M², Fatema N³, Rahman D⁴, Momtaz H⁵

Summary

During the period of November 2000 to November 2002 a total of 335 invitro fertilization (IVF) cycles were done in the "Centre for Assisted Reproduction," Shamoli Dhaka. 99 patients conceived, 55 of them conceived following invitro fertilization embryo transfer (IVF-ET) and 44 patients following invitro fertilization Intracytoplasmic sperm injection embryo transfer (IVF-ICSI-ET). 30 patients have already delivered and there are 38 ongoing pregnancies waiting for delivery. The indications for doing IVF among the conceived patients were female factor, male factor, combined factor and unexplained infertility in 55.55 %, 35%, 8% and 1.01 % Respectively.

The main aetiologic factors in female were tubal block in 32.32%, endometriosis in 9.09%, malignant ovarian tumour in 2.02%, anovulatory in 12.12%. Among the male factors obstructive azoospermia was in 14.1% patients and oligoasthenozoospermia in 21.2% patients. The pregnancy rate following IVF was 29.55%. Early pregnancy loss occurred in 30.3% of the conceived patients resulting in the take home baby rate of 20.6%.

Introduction

Since the birth of Louise Joy Brown the baby of the 20th century on 25th July 1978, more than 200,000 IVF babies are already born. To make newer technologies available for our people the only IVF centre in the country "The Centre for Assisted Reproduction" at Shamoli Dhaka has started to give the facility to the people of the country since November 2000. By now ninety nine patients have become pregnant by the IVF and the ICSI procedures giving a pregnancy rate of 29.55%. According to WHO study and other reports some 50-80 million people in the world are suffering from either primary or secondary infertility^{1,2}. If we consider that 20% of the total population of Bangladesh (13 crore) is women in the reproductive age group and 10% of that population are facing the problem of infertility it seems that about 2.6 million are suffering from infertility. The hospital statistics has shown that 7.8% of the Gynaecological outdoor patients of BSMMU are suffering from infertility. According to the BIRPERT survey, 6.2% of the community population suffer from infertility in Bangladesh.³ All infertile patients seeking consultation with the gynaecologists does not require high technology treatment. Psychological support and coital advice may be enough for some. Correction of anovulation and thereby inducing regular unifollicular ovulation or superovulation can help many patient to reach their target. Precise and accurate diagnosis is important to decide what treatment is most likely to be successful for the particular couple. The prime target is to achieve a healthy pregnancy by an effective and safe treatment of short duration. Since the delivery of our first IVF babies there was an apparent

increase of the infertile patients in the centre which was due to the awareness of the people about the effective and increasing range of available infertility treatment.

Setting up of the IVF technology in the country

It took a long period of dedicated effort to set up the centre. The thing started up to take a shape when firm determination to set the centre was planned in 1994. Manpower training and skill development effort was started since then. IVF lab setup was started in Shamoli in 1997 and completed in the early part of the year 2000. Outdoor of the centre started operating from 5th November 1999. Recruitment of patients for IVF was started since then. The first batch of IVF was done in November 2000. The ART technology is a continuous process in the centre thereafter. During the initial one and half years embryo transfer was done on day 2 or day 3 of ovum pick up. Now Blastocyst culture is being done in the centre with newer sequential media and day 5 transfers are done. Embryo cryopreservation has been recently introduced for the patients.

Results

A total of 335 IVF cycles were done during the period of November 2000 to November 2002. Ninety nine patients conceived. 68.7% of the conceived patients were in the

Clinical and demographic data of the Conceived patients following IVF / ICSI

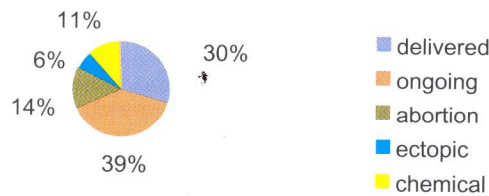
Age in years	21-29	24.24 %
	30-39	68.68 %
	40-44	7.07 %
Duration of Marriage in years	1-5	17.17 %
	6-10	36.36 %
	11-15	24.24 %
	16-20	15.15 %
	>20	6.06 %
Duration of Infertility in years	1-5	19.19 %
	6-10	44.44 %
	11-15	18.18 %
	16-20	16.16 %
	>20	1.01 %
Weight in Kg	<50	7.07 %
	50-69	63.6 %
	>70	29.3 %
Hailing from	Dhaka	64.6% %
	Out side Dhaka	35.4% %

Indication of IVF

Female factors 55.55%	Tubal	32.32
	Anovulatory	12.12
	Endometriosis	9.09
	Malignant OV Tumour	2.02
Male factor 35%	Oligo astheno	21.21
	Obstructive AZ	14.14
Combined(8%)		8.08
Unexplained(1.01%)		1.01

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Outcome of IVF/ICSI pregnancy (99 Patients)



age group of 30-39 years. 67.6 % of patients were suffering from primary infertility and 32.3% from secondary infertility. Main indication for doing IVF was tubal block and male factor problems. The best outcome was in patients who had duration of marriage and infertility around 6-10 years. 30 patients have delivered and ongoing pregnancy is in 39 patients. Chemical pregnancy occurred in 11 patients, abortion in 13 patients and ectopic pregnancy in 6 patients giving a cumulative pregnancy wastage rate of 30.3% . The take home baby rate is 20.6%. 55 patients conceived following IVF-ET and 44 patients following IVF-ICSI-ET. Among the conceived patients female factor was the cause of infertility in 55.55% cases. In 35%, and 8% male factor and combined factors were responsible respectively. In 1.01 % the cause of infertility was unexplained.

Outcome of the live born babies

		No	%
Delivered at weeks (30patients)	30	2	6.66
	31-32	2	6.66
	33-34	5	16.66
	35-36	8	26.66
	37-40	13	43.33
Singleton/Multiple Pregnancy (99)	Single	88	88.88
	Twin	4	4.04
	Triplet	7	7.07
Weight Of Baby. (In Kg)	1-1.5	9	21.95
	1.6-2	6	14.63
	2.1-2.5	15	36.58
	2.6-3	8	19.51
	>3	3	7.31
Sex of the baby	Female	22	53.65
	Male	19	46.34

The main aetiological factors in female were tubal block in 58.18%. A total of 41 babies are born by now, out of which there was 24 singleton babies, one twin babies, five triplets. The main antenatal complications were PET, Diabetes Mellitus, hyperstimulation threatened abortion. Post partum haemorrhage occurred in 6.6% of the cases. In 61% of the patients the duration of gestation was more than 35 weeks. Triplets were remarkably high in this series. Fourteen babies had prolong hospital stay, Incubator facilities was required by 9 babies, congenital anomaly in one baby whose mother was 43 years and the father had severe male factor problem and the baby had multiple congenital anomaly. We lost two babies, one for the congenital anomaly and one for the complication of prematurity.

Discussion

The success rate of an IVF cycles depend on several factors especially on the age of the female, number of oocytes recovered , the fertilization rate and the cleavage rate of the

embryo and on the embryo transfer technique also. With the advent of the newer laboratory techniques success rates has been claimed to be quite high than the quoted 25 to 30%. Our success rate of 29.55% is comparable with the others. Neonatal mortality and morbidity in children born after infertility treatment has been shown to be higher than the spontaneous pregnancy^{4,5} which is also comparable with our finding. Among singletons low birth weight is significantly more frequent when infertility treatments were used.⁶ 53.65% of babies were female and 46.34% were male. Gestational age and baby weight are the two best prognostic factors for the outcome of pregnancy. We had a significant number of pregnancies delivered at 33-36 weeks of gestation. It has been suggested by Cooperstock and Campbell that preterm delivery may be induced by fetal gender i.e lower gestational age in males than in females.⁷ which was not so in our cases. Maternal age is widely reported to influence the success of IVF and pregnancy outcome⁸

In our series we had a significant number of elderly women for treatment. The main effect of infertility treatments is a rise in the incidence of multiple births⁹⁻¹². In our series also it was reflected. We were scared of the number of triplets which we had to manage in our delivered patients. The risk of twinning increases the risk of pregnancy by eight times and triplets by 50 times. To reduce the multiple pregnancy, we have started single embryo transfer since June 2002. Two to three embryos were transferred to only the elderly patients. This has reduced the incidence of triplets in our later pregnancies since the time we reduced the number of embryos at transfer as well as started the Blastocyst transfer. With IVF the chance of ectopic pregnancy was increased to 4% which as been so quoted in many of the series of other authors.

Conclusion

Priority should not be given only to improve the technological aspects of infertility management, but prevention of infertility by reducing STDs, abortion, adolescent pregnancies, awareness of the decrease of fertility with advanced maternal age is also important. The most important condition for having a steady and a good success rate is selection of patients and a compact working team for the infertile patients. Because of the significant early pregnancy loss the take home baby rate is significantly lowered. The poor success rate in ART is thought to be the poor receptivity of uterus and the poor viability of the embryos. Hope as days pass on - IVF procedures will be more simplified and will be less taxing for both the patient and the physician and success rate will improve with better understanding.

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Enteric fever : A clinical review

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Introduction

Enteric fever is a systemic salmonella infections characterized by prolonged fever, abdominal pain, sustained bacteremia, bacterial invasion and multiplication within the mononuclear phagocytic cells of liver, spleen and lymphocytes and payers patches.

The term Enteric fever encompass both typhoid fever and paratyphoid fever as their main pathological involvement affect the lower part of small intestine. *Salmonella typhi* produces typhoid fever and *Salmonella para a, b & c* produce paratyphoid fever. Typhoid fever has got longer incubation period with severe pathology and clinical manifestations but paratyphoid has got shorter incubation period with milder pathology and clinical manifestations. Due to similar pathogenesis, pathology and clinical manifestations both typhoid and paratyphoid fever will be discussed together under the term of enteric fever.

Epidemiology

Typhoid and paratyphoid fevers are endemic in the Indian subcontinent, south and central America, and Asia, and is related to rapid population growth, increased urbanization, inadequate waste treatment, limited water supply, and over burdened health care system. It occurs during all season. Adults and children of all ages and both sexes equally susceptible to infection. In developing countries, most cases occur in school aged children and young adults. Although acquired immunity provides some protection, reinfections have been documented.

Salmonella typhi only infects man and disease transmitted from fecal carriers and patients. Females and older males are prone to become chronic fecal carriers, because of underlying cholecystitis. *Salmonella typhi* is resistance to drying and cooling, thus allowing bacteria for prolonged survival in dried sewage, water, food and ice.

The typhoid bacilli enter the host by the oral route. The major vehicles of infection are water and food, contaminated by feces or urine of infected patients or carriers. A small proportion of typhoid cases may occur by direct transmission through contaminated hands. Rarely, transmission can occur in homosexual. Enteric fever can occur by transplacental infection from a bacteremic mother to her fetus. Flies have been shown to transmit typhoid bacilli.

In endemic region 15-35 age group with HIV positive individual the rate of clinical typhoid is about 25 fold greater than HIV negative individuals. Asymptomatic HIV positive patients have a typical clinical presentation and response to therapy. In AIDS patient it is associated with fulminate diarrhoea and or colitis and are for more likely to relapse.

Etiopathogenesis

The typhoid bacillus is a motile gram negative rod in the family of enterobacteriaceae. It has flagellar H antigen, a cell wall lipopoly saccharide O-antigen and a cell wall capsule, virulence Vi antigen. The somatic antigen i.e. O antigen confers serologic specificity of the organism. The capsular Vi-antigen is one of the virulent factor. These antigens play a critical role in permitting the organisms to invade the lymphoid tissue from the gut lumen and to multiply within macrophages.

After ingestion the organisms rapidly proceeds through the pylorus into the small bowel. After attachment to the microvilli, salmonella typhi penetrate the intestinal mucosa and travel first to the mesenteric glands and then into blood stream (primary bacteremia). The organisms are taken up from blood by reticuloendothelial tissue (including liver, spleen and bone marrow) where they multiply silently until the end of the incubation period.

After proliferation in the reticuloendothelial system, the bacteremia occurs (secondary bacteremia). The gall bladder is particularly susceptible to infection. Local multiplication in the walls of the gall bladder produces a large amount of organisms, which secondarily reach the intestine through the bile. Circulating endotoxin, a lipopoly saccharide component of the bacterial cell wall, thought to cause prolonged fever and toxic symptom of enteric fever. Payer's patches become further affected by secondary bacteremia and by infected bile. Inflamed payer's patches may later ulcerate leading to hemorrhage and intestinal perforation. In carriers, a large number of virulent bacilli pass into the intestine daily and are excreted in to the stool, without entering the epithelium of host.

Clinical course

The incubation period of *Salmonella typhi* ranges from 3-21 days. The onset of symptom is insidious and initial symptom is fever, preceded by chills, headache, anorexia, cough, weakness, sore throat, dizziness and muscle pain. The temperature increases in a stepwise fashion over the course of 2-3 days reaching a peak of 103°-104°F. Epistaxis may occur occasionally. Early intestinal manifestations include constipation, associated with abdominal distention and slight tenderness in the right iliac fossa. Early physical examination reveals bradycardia relative to high fever.

During the 2nd week, the patient become dull and apathetic with sustained high temperature. Erythematous maculopapular rash which blanch on pressure, known as rose spot, appears chiefly on the upper abdomen and thorax, in this week and lasts for only 2-3 days. Splenomegaly (in 75% cases) and hepatomegaly (in 30% cases) with cervical lymphadenopathy may be present.

3rd week is the week of complications. If therapy is not yet started, the patient become toxic and ill, high fever continues and delirious, confusional state (Typhoid state) sets in. Marked abdominal distention and 'pea soup' diarrhoea are common. Intestinal hemorrhage and

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perforation are likely to occur. Toxemic myocarditis is another various complication of this stage.

If therapy started and no complications arises, symptoms of physical findings gradually resolve within 2-4 weeks but malaise and lethargy may persist for an additional 1-2 months. In paratyphoid fever the course tends to be shorter and milder, but the onset is often abrupt with acute enteritis. Sometimes atypical manifestations occur in typhoid fever like, fever with burning micturition with normal urine examinations, diarrhoea in first week, isolated hepatomegaly, pneumonitis and bone marrow depression. Though presentation is atypical patients respond to the conventional treatment (Internet).

Infants and young children

Enteric fever rare in this group. The disease surprisingly mild at presentation making diagnosis difficult, though clinical sepsis can occur. Diarrhoea is more common than adult. Others may present with signs symptoms of lower respiratory tract infection.

Neonates

The neonatal disease usually begins within 3 days of delivery. Vomiting, diarrhoea and abdominal distension are common. Temperature is variable but may be as high as 105° F. Convulsions may occur. Hepatomegaly, Jaundice, anorexia and weight loss can be marked.

Approximately 10% patients suffer a relapse 1-3 weeks after apparent clinical recovery. This usually occurs within 2 weeks of stopping therapy. The relapse is usually milder than initial illness.

Approximately 1-5% of patients become asymptomatic, long-term, chronic carriers who shed *salmonella typhi* in either urine or stool for >1 year. Incidence is higher among woman and among persons with biliary abnormalities like gall stone, carcinoma of gall bladder, and gastrointestinal malignancy. (Harrison)

Complications

Without treatment the disease may become serious and complications develop about 30% of cases and account for 75% of all deaths.

Complications include

1. Intestinal hemorrhage,
2. Intestinal perforation,
3. Others are
 - anicteric hepatitis
 - bone marrow suppression
 - paralytic ileus
 - myocarditis
 - psychosis
 - cholecystitis
 - syndrome of inappropriate release of anti diuretic hormone (SIADH).

Diagnosis

The preferred method of diagnosis is isolation of *salmonella typhi* by culture of blood, stool and urine and bone marrow from iliac crest. Serological tests like WIDAL test maybe helpful. Blood culture is usually positive during the first 2 weeks of illness. Stool and urine culture are positive in 3rd weeks onward. When culture of the above mentioned materials are negative, bone marrow culture is done and it

is positive nearly 90% cases. In WIDAL test the Oagglutinin titer of >1:80 or 4 fold rise support a diagnosis of typhoid fever. Whereas the Haggglutinin are more often nonspecifically elevated by immunization or previous infections with other bacteria. Serodiagnosis has limited value, false positive and false negative result may arises. Newer serodiagnostic test such as Vi indirect immunofluorescent antibody test and detection of IgM antibody to *salmonella typhi* lipopolysaccharide antigen by enzyme-linked immunosorbent assay (ELISA) are under investigation.

Other laboratory findings include

- Transient leukocytosis during the first 7-10days of illness, but leucopenia (predominantly neutropenia) subsequently develops and is most severe during the 3rd week disease.
- Anaemia of variable severity with diminished platelet count.
- Liver function tests frequently show elevated aminotransferase and bilirubin concentration.
- In patients with diarrhoea stool shows fecal leukocytosis.

Differential diagnosis

1. Malaria, in particular falciparum malaria which does not have the characteristic periodicity of vivax malaria.
2. Brucellosis.
3. Acute liver abscess.
4. Infectious mononucleosis.
5. Typhus fever.

Management

General measure

It is very much important and includes sufficient bed rest, good nutrition, proper nursing care and careful observation for evidence of intestinal bleeding or perforation. Fluid replacement is very much essential and sometimes blood transfusion may be needed. Supportive treatment with antipyretics and vitamins is often helpful.

Specific treatment

The emergence of multi drugs resistant *salmonella typhi* (MDRST) has made the treatment limited and ciprofloxacin, a quinolone derivative, become the drug of choice as it found to be most effective drugs against enteric fever. The dose of ciprofloxacin is 750mg orally twice daily or 200mg intravenously twice daily for 2 weeks, but 5-10 days maybe sufficient.

Alternative drugs include co-trimoxazole with standard adult dose 640mg, trimethoprim and 320mg sulphamethoxazole are given orally in two divided dose for 14 days. For children the dose is 185mg/m² of body surface area per day of the trimethoprim component for 14 days. Amoxicillin (750mg 6 hourly) and chloramphenicol (500mg 6 hourly) for 14 days. Ceftriaxone is effective against salmonella infection and the dose is 2gm I/V once daily for 7 days.

In case of children treatment with fluoroquinolones to MDRST maybe used with a dose of ciprofloxacin 15-25mg/kg body weight for 9-16 days with monitoring for possible damage of cartilage and arthropathy. In that case ceftriaxone can be given with a dose of 50-80mg/kg body weight for 5 days.

In carriers treatment should be continued at least 4 weeks. Cholecystectomy may also achieve this goal

Prognosis

The mortality rate of typhoid fever is about 2% in treated case, with complications the prognosis is poor. Relapses occur in upto 15% of case.

Prevention

General measure :

1. Cases and potentially exposed contacts should be instructed about hand washing after defecation and diaper changing and before food preparation or meals.
2. Patient should be isolated and guidelines for the safe handling of fecal and other contaminated materials should be provided.
3. All individuals who have Salmonella infection should be excluded from work, school or day nurseries until they are free of symptoms.
4. Food of animal origin should be thoroughly cooked. Eggs should be boiled for at least 5 minutes.

Immunization

Immunization is generally recommended for household

contacts of chronic carriers, for travelers of endemic areas, and during out-breaks. Two subcutaneous injections of heat-killed phenol-extracted whole typhoid vaccine at a dose of 0.5ml at intervals of 4 weeks, with booster dose given every 3 years if needed. Or first-generation live oral vaccine given as 1 capsule every other day for a total of 4 capsules. These vaccines give only partial protection and thus vaccinated persons should be still exercise dietary precaution.

Conclusions

There is rapid emergence of multi drug resistant typhoid fever. There are only a few drugs left to fight the infection. Appropriate health education, early diagnosis, and eradication of carrier stage can probably improve this situation.

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Continuation of the case report from page63

activated mononuclear cells and keratinocytes may contribute to epidermal cell death and constitutional symptoms¹.

The diagnostic criteria for stevens johnson syndrome is individual "target" skin lesions less than 3 cm. in diameter, involvement of less than 20% of the body surface area, involvement of at least two mucous membranes namely the eyes, oral cavity, upper airway or esophagus, gastrointestinal tract or anogenital mucosa and biopsy compatible with this syndrome⁴. The appearance of mucosal lesions is erythema and edema, which progresses to erosions and pseudomembrane formation. Stomatitis may be found in 100% of patients, ocular involvement in 86%, genital mucosal or urethral involvement in 41% and anal mucosal involvement in only 3% of patients. Upper airway mucosal involvement and pneumonia may be seen in upto 30% of cases⁴. In our patient there was involvement of lips, oral cavity and eyes. In addition, virtually all patient will develop a characteristic maculopapular rash, usually early in the disease.

Prodromal symptoms, such as fever, malaise and cough are sometimes reported as a feature and they usually occur seven to ten days prior to fullblown presentation. Pain from mucosal ulceration is often severe, skin tenderness is minimal to absent. Corneal ulceration, anterior uveitis, panophthalmitis, bronchitis, pneumonitis, myocarditis, hepatitis, enterocolitis, polyarthritis, hematuria and acute tubular necrosis leading to renal failure may occur¹.

Other mucocutaneous syndromes which need to be excluded include Kawasaki's disease, Bechet's syndrome, small-vessel vasculitis syndromes, lupus erythematosus, pemphigus, pemphigoid, epidermolysis bullosa and dermatitis herpiformis¹.

Management of stevens johnson syndrome is supportive and symptomatic. Prompt diagnosis, identification and early withdrawal of all suspected drugs are the most important preliminaries. Ophthalmologic consultation is mandatory. The management of the patients must be

undertaken in specialized intensive care units with the same main types of therapy as for burns: warming of environment, correction of electrolyte disturbances, administration of a high caloric enteral intake and prevention of sepsis with appropriate antibiotics⁵. Oral lesions should be managed with hydrogen peroxide mouth washes and glycerin swabs. Analgesics, antipruritics can also be used to relieve the annoying symptoms. The one longstanding controversy in the treatment of stevens johnson syndrome has been the use of corticosteroids. Although it is used in cases of life threatening systemic impairment, several reviews have concluded that steroids do not shorten the disease course and they produce more medical complications, namely secondary infections⁴.

After healing follow-up is needed for ophthalmologic and mucous membrane sequelae such as ocular scarring and visual impairment, stricture of esophagus, bronchi, vagina, urethra or anus¹. Avoidance of offending drug and chemically related compounds is essential for the patient and first degree relatives⁵.

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Intelligent Hearing Aid

The US FDA recently okayed a new type of hearing aid that automatically turns up the volume when it picks up a human voice.

If it detects only background noises, the device called-Adapto automatically lowers the sound level. Less background noise helps reduce the fatigue commonly encountered among hearing aid users, says, Donald Schum, vice president for audiology for oticon, Adapto's manufacturer.

The hearing aid comes in a nondirectional model, equally sensitive to sounds from all directions, and a directional version that is more sensitive to sounds coming from the front.

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A review on testicular tumours

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Testicular tumours are uncommon but are increasing in incidence¹. It is curious that despite the fact that the testis is usually easily palpable, a testicular tumor often escapes detection until after it has metastasized². Effective chemotherapy means that early stage and low bulk disease are almost always curable, so early diagnosis and accurate staging are important.¹

Epidemiology

For an unknown reason the incidence of testicular tumours has been increasing by 15-20% in successive five-year periods³. Incidence of Testicular tumor is highest in Scandinavia (9 cases/hundred thousand/year) and lowest among the black in the U.S.A. (1 case/hundred thousand/year)¹. Their peak incidence occurs among men aged 25-35 years.³

Aetiology

The following risk factors are thought to be associated with testicular tumours-

1. Young age.
2. Maldescent testes
3. Congenital urogenital abnormalities- hypospadias, inguinal hernia and the 'bell clapper' deformities.
4. Fetal exposure to maternal estrogens.
5. Race- Caucasians > blacks.
6. Trauma and viral (mumps) orchitis.

The hypothesis is that the above risk factors exert their influences via a common effect. Failure of germ cell differentiation is the initiating step of malignant change, which is promoted by hormonal stimulation in puberty, resulting in a peak incidence in the next 15-20 years¹.

Table: 1.0 WHO pathologic Classification of Testicular tumours⁴

A. Germ cell tumours

1. Tumours of one histologic pattern-

- Seminoma
- Spermatocytic seminoma
- Embryonal carcinoma
- Yolk sac tumour
- Polyembryoma
- Choriocarcinoma
- Teratoma

2. Tumours showing more than one histologic pattern-

- Teratocarcinoma
- Choriocarcinoma
- Others.

B. Sex cord stromal tumours:

1. Well differentiated forms-
 - Leydig cell tumour
 - Sertoli cell tumour
 - Granulosa cell tumour
2. Mixed forms
3. Incompletely differentiated forms.

According to predominant cellular types the most commonly encountered Testicular tumours are classified as-²

- Seminoma (40%)
- Teratoma (32%)
- Combined Seminoma & Teratoma (14%)
- Interstitial tumours (1.5%)
- Lymphoma (7%)
- Others (5.5%)

Pathology

Tumours arise from all the tissue types present in the testis and among them 99% neoplasms are malignant.^{1, 2, 5}

Seminoma

Derived from seminiferous tubular epithelium, the cells resemble spermatocytes. Macroscopically, the enlarged testis is found smooth and firm, cut surface is homogenous and pinkish cream in colour.²



Seminoma of the Testis

Teratoma

Arises from totipotent cells in the rete testis and often contains a variety of cell types. Macroscopically, the usual variety is yellowish in colour with cystic spaces containing gelatinous fluid. Nodules of cartilage are often present¹.

Interstitial cell tumours

Arise from Leydig and Sertoli cells, which are usually benign^{5, 6}.

A Leydig cell tumour masculinizes because it secretes androgens.

On the other hand the Sertoli cell tumours feminizes which leads to gynecomastia, loss of libido.²

Carcinoma in situ¹

Usually asymptomatic but in 50% cases there is a chance of developing invasive germ cell cancer in 5 years.

Presentation

Every testicular swelling must be assessed with the possibility of tumour in mind.

Presenting complaints

Classical presentation: painless enlargement of the testicle (75% cases).

Pain : initial symptom (15% cases). A sensation of heaviness, there may be a history of trauma to the affected side (10%).⁷

On examination

The testis is enlarged, usually smooth, firm & heavy.

Loss of testicular sensation is a very early sign.

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Secondary hydrocele occurs in 1 in 7 testicular neoplasm.⁸ The epididymis becomes flattened or incorporated in the growth and so difficult to feel.^{2,4}

Sign of vas⁷: helps in the differential diagnosis between a testicular neoplasm and an inflammatory lesion, which cause the vas to become considerably thickened; in neoplasm it remains normal in all respect.

Rectal examination shows the prostate and seminal vesicle to be normal. Secondary retroperitoneal deposits may be palpable on the side of the tumours. Occasionally the patient may present with the signs of metastasis like enlarged supraclavicular nodes, abdominal or lumbar pain, chest pain, dyspnea and haemoptysis.

Atypical presentation : Epididymo-orchitis, urinary infection, severe pain and acute enlargement of testis due to haemorrhage into a neoplasm, gynecomastia (mainly in Teratomas in 1-5% patients).^{2,9}

The Hurricane tumour : is a ferocious malignancy that kills in a matter of weeks.^{2,10}

Essentials of diagnosis³

- ☐ Painless, firm mass within the testicle in a man aged 18-40.
- ☐ Elevated serum levels of beta hCG, AFP, LDH or all three.
- ☐ Enlarged retroperitoneal nodes on abdominal CT scan.
- ☐ Palpable abdominal mass in advanced cases.

Differential diagnosis^{1,11}

- Epididymo-orchitis
- Testicular torsion
- A syphilitic gumma
- Granulomatous orchitis
- Tuberculosis.

If there is any doubt about the diagnosis surgical exploration should be undertaken.

Investigations

1. Ultrasound of the testis.
2. Chest radiograph
3. Two separate measurements of AFP and beta-hCG.
4. CT scan and MRI to detect intra-abdominal and intra-thoracic secondaries.^{1,12}



CT Scan showing large retroperitoneal mass after chemotherapy

Staging of testicular tumours

Table: 1.1 Clinical staging of testicular tumours^{2,9,13}

Stage 1- Testis lesion only, no spread.
Stage 2- Nodes below the diaphragm only.
Stage 3- Nodes above the diaphragm.
Stage 4- Pulmonary or hepatic metastases.

Table : 1.2 TNM staging of testicular cancer^{1,14}

pTX	Primary tumor cannot be assessed. If radical orchiectomy has not been performed then TX is used.
pTO	No evidence of primary tumour.
pTis	Carcinoma in situ.

pT1	Tumour limited to testis and epididymis without vascular or lymphatic invasion.
pT2	Tumour limited to testis and epididymis with vascular and lymphatic invasion or tumours extends through tunica albuginea with involvement of tunica vaginalis.
pT3	Tumours invade spermatic cord.
pT4	Tumours invade scrotum.
NX	Regional lymph nodes cannot be assessed.
NO	No regional lymph node metastases.
N1	Metastases with a lymph node mass ≤ 2 cm or multiple nodes none > 2 cm in greatest dimension.
N2	Metastases with a lymph node mass > 2 cm ≤ 5 cm or multiple nodes > 2 cm but ≤ 5 cm in greatest dimension.
N3	Metastases with a lymph node mass > 5 cm.
MX	Distant metastases cannot be assessed.
MO	No distant metastases.
M1	Distant metastases.
M1a	Non regional lymph nodes or pulmonary metastases.
M1b	Distant metastases other than non regional lymph nodes or pulmonary Metastases.

Tumour markers

In the context of testicular tumours the value of serum markers is fourfold-

- Evaluation of testicular mass.
- Staging of germ cell tumours.
- Assessing the tumours burden.
- Monitoring the response to therapy.

The biologic markers used in testicular tumours are alpha fetoprotein (AFP), beta sub-unit of human chorionic gonadotropin (beta hCG), lactate dehydrogenase (LDH), placental lactogen and placental alkaline phosphatase among which the first three are most widely encountered. HCG levels are occasionally raised in seminomas (15%), but AFP elevation indicates the presence of a teratomatous element.

Either (AFP and hCG) or both of these markers are elevated in more than 80% of the patients with non seminiferous germ cell tumours at the time of diagnosis. It can be noted that elevated serum levels of AFP are also encountered with liver cell carcinoma^{4,15}.

Table: 1.3 Serum tumour marker categories and stage grouping for testis cancer¹

SX	Serum markers not available		
SO	Serum marker study levels within normal limits		
	LDH	HCG (U/ml)	AFP (ng/ml)
S1	$< 1.5 \times N$	and < 5000	and < 1000
S2	$1.5-10 \times N$	or $5000-50000$	or $1000-10000$
S3	$> 10 \times N$	or > 50000	or > 10000
N: Indicates the upper limit or normal for the LDH assay.			

Metastases

Lymphatic spread common to all form of testicular tumours and in general the retroperitoneal para aortic nodes are the first to be involved. Subsequent spread may occur to the mediastinal and supraclavicular nodes.¹⁶ Seminoma tends to remain in the testis for a long time (70% present in clinical stage1) and usually spread via lymphatics. Hematogenous spread primarily to the lungs but

liver, brain and bones are also involved. Teratomas not only metastasize earlier but also use a haematogenous route more frequently^{4, 17}.

Management

Management requires expertise in chemotherapy, radiotherapy and surgery, in addition to active surveillance with CT scanning. Inguinal orchiectomy with high ligation of the cord at the internal ring is the proper initial treatment for all kind of testicular tumours.^{7, 11, 18}

Seminoma

Seminomas are very sensitive to radiotherapy.

Stage 1 and Low volume stage 2 diseases

Radiotherapy to para-aortic and ipsilateral pelvic Nodes.

Large stage 2 tumour volume

Cisplatin based chemotherapy is used as relapse rate after radiotherapy is high.

Stage 3 and 4 disease

Cisplatin based chemotherapy, with radiation for residual disease.¹

Teratoma

Stage 1 with negative serum markers

Orchiectomy followed by intensive surveillance. If the disease is progressive chemotherapy or retroperitoneal lymph node dissection is done.



Cannon ball metastases from carcinoma of the testis

Stage 1 with positive serum markers/definite metastatic disease chemotherapy until the Markers are negative.

Stage 2 and 3 disease - Four to six cycles of chemotherapy followed by surgical excision of residual disease.¹

Chemotherapy^{1, 19}

Cisplatin in combination with vinblastine & bleomycin forms the basis of modern chemotherapy for Teratomas.

Treating persistent or recurrent disease

Intensive chemotherapy, surgical resection, and, occasionally, radiotherapy are required in persistent or recurrent cases. High dose chemotherapy with stem cell support is usually considered (Success rate- 30%)^{16, 20}.

Treatment toxicity

Chemotherapy with Cisplatin causes nausea and vomiting, alopecia, fatigue, neutropenia, and sepsis. Bleomycin may cause lung toxicity and fatal pneumonitis as well (0.5-1% case)²¹.

Prognosis

Prognosis of testicular tumours depends on histological type and the stage of the growth. Large tumours volume, high levels of tumour markers, presence of undifferentiated tumours in primary and involvement of liver, lungs, bone or CNS indicate unfavorable prognosis. For patients with favorable prognostic factors the long-term survival rates are over 90%.^{1, 22}

Follow up

The aim of follow up care is to detect a relapse, to monitor and treat toxicity related to therapy, to detect contra lateral cancers,

and to offer support and counseling.⁵ A regular follow up should comprise clinical examination, estimation of serum markers and chest radiograph^{6, 23}.

Further development

The optimum treatment for metastatic non-seminomatous germ cell tumours in patients with a good prognosis has been defined but the treatment of patients with poor prognosis and recurrent disease still needs improvement. Surveillance may become more appropriate, especially if staging accuracy improves. Public education and awareness must also be priorities to help patients avoid unnecessary delays in presentation that may have an impact on survival.²⁴ But in Bangladesh yet there is no actual study regarding the incidence, mode of presentation, treatment and final outcome of the patients presenting with testicular tumours. Therefor, a multiconstitutional, prospective, randomized clinical study is necessary to improve the survival and quality of life of the patient with testicular tumour in others countries.

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Complications of otitis media : A review

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Otitis media is a potentially serious disease chiefly because of its complications, which may threaten life and health. This fact has been recognized from antiquity, when Hippocrates, about 460 B.C noted that "acute pain of the ear with continued high fever is to be dreaded for the patient may become delirious and die."¹ Complications of suppurative otitis media develop if infection spreads from the middle ear cleft to structures from which this mucosa-lined space is usually separated by bone. Before antibiotics were regularly available, these complications followed acute suppuration more often than chronic middle ear disease. Nowadays chronic middle ear infection is the greater hazard².

The complication to be discussed fall into two main categories

1. **Those within the cranial cavity**
 - Extradural abscess
 - Subdural abscess
 - Sigmoid sinus thrombophlebitis
 - Meningitis
 - Brain abscess
 - Otitic hydrocephalus
2. **Those within the temporal bone/Extracranial**
 - Subperiosteal abscess
 - Facial paralysis
 - Labyrinthine infections

Pathways of spread in the production of a complication :

- Extension by osteothrombophlebitis
- Extension by bone erosion
- Extension by preformed pathway

Extradural abscesses

The bone erosion of coalescent mastoiditis frequently exposes the sigmoid portion of the lateral sinus to produce a perisinus abscess. The bone erosion of a cholesteatoma more often exposes the dura of the middle cranial fossa to produce an extradural abscess. In either case, protective granulations always form between the pus and the dura.

Symptoms

The majority of perisinus and extradural abscesses produce no symptoms and are a chance finding at operation. Their presence may be suspected when

1. There is profuse or markedly intermittent otorrhea.
2. There are marked pulsations of the purulent discharge.
3. There is a low grade fever of unknown origin following acute otitis media.
4. There is persistent headache on the side of otitis media.
5. There are symptoms and signs of localized protective meningitis.
6. The X-ray shows an unusually large coalescent or cholesteatoma cavity. Computed tomographic scan shows an epidural collection with a contrastenhancing periphery.

Occasionally a very large extradural abscess may cause symptoms of cerebral compression, with somnolence, projectile vomiting, papilloedema, and slowed pulse, resembling, but without the localizing symptoms of a brain abscess.

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Treatment

The treatment of perisinus or extradural abscess is surgical. If the symptoms and finding suggest a possible extradural or perisinus abscess, the tegmen and sinus plates should be removed at operation and the dura exposed.

In addition to the wide exposure of an extradural or perisinus abscess, the causative coalescent or cholesteatomatous bone eroding disease must be dealt with by the appropriate mastoidectomy.

Subdural abscess (empyema)

Clinical features

The development of a subdural empyema is heralded by the development of severe headache, fever and drowsiness, which is followed by the onset of focal neurological symptoms, both irritative as fits and paralytic. The course is much more rapid than that of a brain abscess. Drowsiness may develop over a few hours and proceed quickly to coma. Paralysis of one upper or lower limb may rapidly extend to hemiplegia. Hemianopia and hemianaesthesia occur and if the lesion is on the dominant side, aphasia develops. Epileptic fits of Jacksonian type, starting locally and spreading to affect one side of the body, may precede the weakness. These fits sometimes increase in frequency, and are probably the result of the cortical thrombophlebitis. Papilloedema is uncommon, as are cranial nerve palsies but they have been described in the fully developed picture. The site of the fits, and the pattern of weakness indicate the position of the empyema.

Diagnosis

Meningism may accompany the headache. The clinical picture can usually be distinguished from that of meningitis by virtue of the characteristic neurological localizing features. The rate of development, over hours rather than days, is much faster than would be expected from a typical brain abscess. Nowadays, a definitive diagnosis relies on enhanced CT scanning but pictures may be equivocal or normal and MRI may prove to be more reliable. Lumbar puncture is helpful, but risky. The cerebrospinal fluid pressure is raised, but its sugar content is normal, and cultures are sterile. The fluid may occasionally be turbid if there is marked pleocytosis.

Treatment

This complication must be managed in closed cooperation with a neurosurgeon. Treatment comprises the administration of massive doses of systemic antibiotic, removal of the subdural fluid and treatment of the ear disease.

Lateral sinus thrombophlebitis

Symptoms

The most constant, characteristic and sometimes the only symptom of lateral sinus thrombophlebitis is fever. Typically the fever is septic in type with wide swings in the temperature curve producing a "picket fence" temperature chart. Chills usually precede the sharp rises in temperature and profuse sweats accompany the downward swings. Each rise in temperature corresponds to the escape of a fresh batch of organisms into the systemic circulation, occurring at irregular intervals but averaging once or twice in 24 hours. The temperature curve resembles that of malaria but lacks its regularity.

Between the bouts of fever, the patient with lateral sinus thrombophlebitis is alert with a sense of well being out of proportion to the serious illness and the prostration of the patient with meningitis. Progressive anemia is the third symptom of infection of the lateral sinus.

Progressive emaciation is the fourth symptom Less common symptoms of lateral sinus thrombophlebitis are oedema over the

posterior aspect of the mastoid emissary vein, known as Griesinger's sign: tender, enlarged cervical glands along the internal jugular vein on the involved side; extension to the cavernous sinus via the superior and the inferior petrosal sinus, with the usual symptoms of cavernous sinus thrombosis, namely chemosis, proptosis, fixation of the eyeball, and papilloedema: and pain when there is dural inflammation.

Diagnosis

A positive blood culture is very strong evidence in favor of lateral sinus thrombophlebitis. However, a negative blood culture on one or several occasions does not rule out lateral sinus thrombophlebitis.

Treatment

The aim of therapy today is the control of infection, not the reestablishment of blood flow through the sinus. Intravenous antibiotics are started to sterilize the blood and to prevent mastoidectomy, with wide exposure of the sigmoid sinus. The mastoidectomy may be either an open cavity or an intact canal wall technique. After exposing the bony sigmoid sinus, the dura of the sinus and the posterior fossa must be explored. Granulation tissue is bluntly dissected from the dura and any abscesses are drained. Bone is removed from the dura and sinus until normal dura is visualized all around the area of phlebitis. If the sinus is found to be normal in appearance and easily compressible no further dissection is indicated.

If the sinus wall is markedly thickened, inflamed and not compressible, the status of blood flow through its lumen should be assessed. This assessment may be done by inserting a small gauge needle into the lumen and aspirating blood. If blood is found, no further surgery need be done. However, if blood is not aspirated, the sinus should be opened. If a fibrotic mural thrombus is found, no additional dissection is indicated. However, if an infected thrombus or mass of granulation tissue is found it should be removed through gentle dissection and suction.

Otitic Hydrocephalus

Symptoms

In 1927, Symonds described a syndrome of increased intracranial pressure without a brain abscess following several weeks or more after acute otitis media. The most constant symptom is headache, often with sixth cranial nerve paralysis on the same side and sometimes with vomiting. Otherwise the patient looks and feels quite well. The most constant findings are papilloedema and a spinal fluid pressure exceeding 300 ml of water. Unlike localized meningitis, the spinal fluid is clear without increase in cells or protein. In contrast to brain abscess, there are no localizing neurologic changes and ventriculography of computed tomographic scan does not show a space occupying lesion.

Diagnosis

The diagnosis of otitic hydrocephalus is made by lumbar puncture, showing a normal spinal fluid under markedly increased pressure, in a patient who develops headache and papilloedema with or without sixth cranial nerve paralysis 1 to several weeks or more after otitis media.

Treatment

The treatment of otitic hydrocephalus is to reduce the increased intracranial pressure by repeated lumbar or ventricular punctures and use of diuretics and if necessary to perform a subtemporal decompression, until the condition subsides, so as to prevent optic atrophy from prolonged papilloedema. After weeks or months, the increased cerebrospinal fluid pressure slowly return to normal.

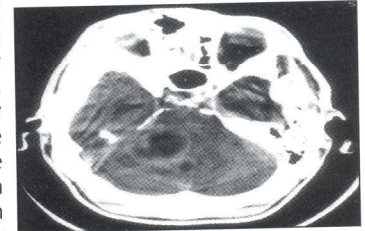
Brain abscess

Otitis media, despite the benefits of antibacterial therapy, continues to be a frequent cause of brain abscess.

Otitic brain abscess occurs in the temporal lobe twice as often as in the cerebellum. As a rule, otitic brain abscess is single. In rare cases, otitic brain abscess may be multiple, it may become multilocular and involve the parietal and occipital lobes and it sometimes occurs primarily in the parietal lobe rather than in the temporal lobe or cerebellum.

Symptoms and Signs

The symptoms of the first stage of initial encephalitis rarely last more than a few days and are generally mild, but they are sufficiently characteristic to alert the keen clinician to the possibility of beginning brain involvement in a patient with otitis media. A chill or chilly sensation, following by a slight or moderate rise in temperature lasting several days frequently heralds the invasion of the brain. Headache and nausea, sometimes with non projectile vomiting, are often present. If observed closely, the patient may appear apathetic, drowsy, or irritable. In children a convulsion may be the first evidence of cerebral involvement.



As a rule, there are no localizing neurologic changes in the stage of initial encephalitis. Should there be a localized meningeal reaction, there may be slight stiffness of the neck and the spinal fluid will show a slight to moderate increase in cells and protein but without organisms and with a normal glucose content.

The symptoms of the second latent or quiescent stage, as its name implies, are minimal or absent in many cases. In other cases malaise, poor appetite, intermittent headache, and slight temperature elevation may persist with listlessness, drowsiness, slowed cerebration and fretfulness or irritability due to continued encephalitis. The latent or quiescent stage lasts from 10 days to several weeks or rarely, several months. As a rule, there are no neurologic signs and the number of cells in the spinal fluid diminishes or returns to normal.

The symptoms and signs of the third stage of manifest expanding abscess are due to cerebral compression caused more edema and encephalitis around. As the encephalitis and edema fluctuate from hour to hour and day to day, so the symptoms and signs may come and go. Therefore repeated frequent examination of the patient is often necessary to make the diagnosis of a brain abscess.

The symptoms and signs of an expanding brain abscess are of two types: those due to generalized increased intracranial pressure and those due to localized pressure on brain centers.

The most constant generalized symptom of brain abscess is severe and usually continuous headache. Projectile vomiting is common and characteristic. Intermittent slowing of the pulse due to pressure on the vagus center in the brain stem is more common than Cheyne Stokes respiration due to pressure on the respiratory center. The temperature may be slightly elevated, normal, or subnormal. Apathy and drowsiness may be accompanied by disorientation. Jacksonian convulsions and ocular paralysis with pupillary changes may occur.

The most constant signs of increased intracranial pressure are in the eyegrounds, occurring in about half the cases, with blurring of the disc margins, hyperaemia or papilloedema. The spinal fluid is rarely normal in brain abscess and usually shows a slight increase in cells and protein. Spinal fluid should be withdrawn by lumbar puncture cautiously and in small amounts in cases of suspected temporal lobe abscess and only by ventricular puncture in case of a suspected cerebellar abscess to avoid herniation of the brain stem into the foramen magnum.

Symptoms and signs of increased intracranial pressure are more constant and definite in cerebellar than in temporal lobe abscess because of the restricted space of the posterior fossa and its proximity to the brain stem. In addition to the slowed pulse and cheyne stokes respiration, there may be elevation of blood pressure due to pressure on the brain stem.

The most constant symptom of a left temporal lobe abscess in a right handed patient is aphasia, usually of the naming variety, so that the patient cannot remember the name of a familiar object, such as a pencil or pen, although he or she knows perfectly well its purpose and quickly recognizes the correct name when he or she hears it. The next most common focal symptom is paresis of the face and mouth on the opposite side. Visual field defects may be found, although these are not easy to demonstrate in a confused or lethargic patient.

The most constant symptom and sign of a cerebellar abscess is ataxia on the same side, most easily demonstrated for the hand and arm. The patient does poorly on the finger to nose test, there is decreased ability to alternate movements rapidly (adiadochokinesia) and there may be a coarse intention tremor. Muscular hypotonia and weakness on the involved side are present without paralysis. The gait is ataxic with a tendency to fall toward the diseased side. Especially characteristic is a spontaneous nyctagmus that fluctuates in degree and direction and is often vertical or oblique. A striking symptom of cerebellar abscess is rapid emaciation of the patient despite a fair appetite, probably owing to pressure on vegetative centers in the brain stem.

Diagnosis

The suspicion of brain abscess or lateral sinus thrombosis arises in any patient with chronic suppurative otitis media with cholesteatoma who has a chill followed by a low grade fever and headache. If after a latent period symptoms and signs of increased intracranial pressure develop, a brain abscess probably exists. When localizing symptoms and signs occur there is almost the certainty of an abscess. In some cases, a latent brain abscess becomes manifest soon after a radical mastoidectomy with severe headache and fever followed by localizing symptoms. For this reason, a computed tomographic scan of the brain should be obtained in any case in which there is a suspicion of an intracranial complication. This is particularly true in case in which there is a suspicion of an intracranial complication.

Computed tomographic scanning is currently the most valuable diagnostic aid for the detection of intracranial space occupying lesions. Computed tomographic scans are performed with and without contrast enhancement.

Treatment

The patient is admitted to the hospital and a computed tomographic scan is obtained. When the diagnosis is confirmed, the patient is given intravenous antibiotic therapy. The choice of antibiotic is based on isolated organisms along with the presumption that anaerobic bacteria are involved. Intravenous dexamethasone is given to reduce brain edema, the ear is cleaned and antibiotic steroid drops instilled into the canal. Neurosurgical consultation is obtained.

The patient is taken to surgery as soon as possible. The abscess is approached through a craniectomy rather than through the ear. The abscess cavity is aspirated, and a specimen is submitted for culture and sensitivity and gram's stain. The cavity is then gently irrigated with saline and antibiotic solution. Some controversy exists as to the best management of the abscess cavity. The preferred method is to perform repeated aspirations and irrigations of the abscess cavity until resolution occurs. Alternatives include open incision and drainage of the abscess cavity and resection of the abscess in toto. Total resection is accompanied by higher incidence of post surgical seizures. These decisions are best made in conjunction with the neurosurgical

consultant.

When the patient has stabilized from the abscess drainage, the ear is approached surgically. This surgery is usually 3 to 4 days after the craniectomy although it can be sooner, depending upon clinical circumstances. Surgery is aimed at cleaning infection rather than reconstruction of hearing at this stage.

Antibiotic therapy is usually continued for 4 to 6 weeks.

Meningitis (leptomeningitis)

This is a major and serious complication of middle ear infection and probably still the commonest intracranial complication.

Clinical features

The two most constant and reliable early clinical features are headache and neck stiffness. At first the headache may be localized to the side of the infected ear but soon becomes generalized and bursting. There is malaise and pyrexia often to 39°C. Initial neck stiffness shows as resistance to flexion, later rigidity or retraction develop. Mental hyperactivity, fretfulness in children. Anxiety, punctuated by periods of drowsiness is usual in adults. At this stage, the tendon reflexes may be exaggerated. Photophobia is a constant characteristic symptom and before neck stiffness is marked, the patient may lie curled up away from the light. Vomiting, caused by raised intracranial pressure is also a feature.

As the condition proceeds, all these symptoms become more severe. The headache may be excruciating, and neck rigidity is marked with a positive Kering's sign, retraction and later on opisthotonus. The temperature remains uniformly raised with none of the swinging pattern, which used to characterize lateral sinus thrombosis. Gradually, the tendon reflexes become less marked and the abdominal reflexes may be lost.

Deterioration is marked by alternating delirium and stupor, passing finally into coma. The tendon reflexes disappear, and cranial nerve palsies develop. Eventually cheyne stokes respiration follows, with fixed dilated pupils, then coma and death.

Any local neurological signs, especially in the early stage should raise suspicion of cerebral abscess. Similarly epileptic fits do not occur with otherwise uncomplicated meningitis. The neck stiffness, which is so typical of the disease may be delayed for several days from the onset, especially if the first accumulation of exudate is vertical rather than in the basal cisterns.

Diagnosis

The diagnosis is made by examination of cerebrospinal fluid. Any patient with middle ear infection headache and neck stiffness must undergo a lumbar puncture. At the same time, suspicion of other complications must always be entertained, and possible brain abscess and subdural empyemas need to be excluded, preferably by CT scanning. In the earliest stages of otogenic meningitis the only abnormality on lumbar puncture is a rise in fluid pressure above the normal 100-150 mmHg. As the infection proceeds white cells accumulate in the cerebrospinal fluid and the fluid becomes cloudy and then turbid in appearance. On cytological inspection, most of these cells will be found to be polymorphonuclear leucocytes, which are not normally present in cerebrospinal fluid. They increase in number to reach the range of $0.1-10 \times 10^9/l$ ($100-10000/mm^3$), although with *Staphylococcus epidermidis*, count below $0.1 \times 10^9/l$ may be met. Thus the protein content may rise from a normal 150-400 mg/l to a raised level of 2-3 g/l. The chloride content may fall from the normal 120 mmol/l to 80 mmol/l. The appearance of bacteria in the cerebrospinal fluid is accompanied by a fall of cerebrospinal fluid is accompanied by a fall of cerebrospinal fluid glucose levels from the normal value of 1.7-3.0 mmol/l to zero. Bacteriological examination of cerebrospinal fluid is first undertaken by direct examination after gram staining, and then by culture of the fluid. Despite positive diagnostic findings on cellular and biochemical

testing, positive bacteriological diagnosis is by no means the rule, and so treatment cannot wait for, nor depend upon, it. The lumbar puncture findings are decisive when no mass shows on CT scanning, even without bacteriological identification. There is no other complication in which the cerebrospinal fluid sugar level is lowered, and few in which the white cell count is so high. A brain abscess, if leaking into the subarachnoid space may cause a huge rise of cerebrospinal fluid white cell count even to more than $50 \times 10^9/l$ ($50000/mm^3$) and a subdural abscess to counts over $0.1 \times 10^9/l$. In both of these the cerebrospinal fluid pressure may be raised but in neither is the cerebrospinal fluid sugar level reduced. In the presence of cerebrospinal fluid pleocytosis. CT scanning should exclude either form of abscess leaving a diagnosis of meningitis unchallenged.

MRI may show typical signal changes in meningitis, although a CT scan will be normal.

Treatment Surgical

As with most other complications, treatment of the intracranial sepsis should take precedence over management of the otitis media. Medical treatment of the meningitis is of paramount importance and any operation for the ear condition should, if possible, be deferred from several days until the patients general condition has improved. Years ago, before antibiotics offered hope of cure, appropriate ear surgery was undertaken as soon as the diagnosis had been made. Nowadays, urgent surgical intervention should be advised only if the expected response to treatment does not appear. Certainly deterioration or failure of response over 48 hours implies loculated infection in the mastoid, needing surgical drainage.

Medical

Because of its frequent role as a causative agent, *haemophilus influenzae* must be a target of any regimen, and since more and more strains are becoming resistant to ampicillin, chloramphenicol is considered the first choice combined with ampicillin or penicillin.

Agents like to be effective against gram negative organisms must also be considered when the infection is secondary to chronic middle ear disease. In these categories are azlocillin, ticarcillin and some newer cephalosporins such as ceftazidime. All are less toxic than aminoglycosides like gentamicin. Systemic therapy must be continued for at least 10 days after apparent clinical recovery. If bacteroides are found on anaerobic culture, metronidazole should be administered in a dose of 400 mg 8 hourly. Dexamethasone is now a days considered to be useful adjunctive therapy in the treatment of bacterial meningitis. The lumbar puncture used for diagnosis may be repeated several times to reduce intracranial pressure, possibly a second time in the first 24 hours and then daily until improvement is assured.

Subperiosteal abscess³

- Postauricular abscess: lies over the external surface of mastoid and is the commonest type, especially in children. The auricle is displaced outwards, forwards, and downwards. The postauricular sulcus tends to be retained. Pus has often tracked outwards through minute vascular channels in the suprameatal (Macewen's) triangle.
- Zygomatic abscess: pus escaping from zygomatic cells near the squama forms an abscess deep to the temporal muscle and makes a swelling above and in front of the ear. This may be confused with a parotid swelling. Pus escaping from more distal cells in the process forms an abscess superficial to the temporal muscle. Pus tracking outwards under the periosteum of the roof of the bony canal can reach the subtemporal position (Luc's abscess).
- von Bezold's abscess: perforation of the tip or inner surface of the mastoid may give rise to an abscess in the sternomastoid muscle (von Bezold's) or

- in the digastric triangle (Citelli's)
- Pharyngeal abscess: pus tracking from peritubal cells may form a parapharyngeal or retropharyngeal abscess.



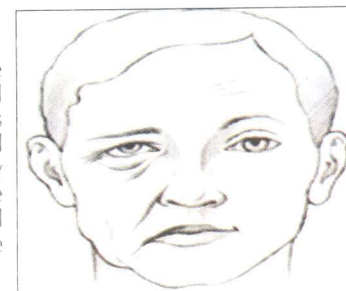
Treatment

Mastoid exploration and drainage of abscess.

Facial paralysis

In acute otitis media

Facial palsy occurs in acute otitis media in that small proportion of patients (less than 10%) with a congenital dehiscence of the thin bony wall normally separating the horizontal part of the facial nerve canal from the middle ear mucosa.



Treatment

The affection of the nerve is invariably a neuropraxia and full recovery of facial muscle function is to be expected after recovery from the preceding infection. This can usually be achieved by appropriate systemic antibiotic treatment but occasionally myringotomy or more rarely, cortical mastoidectomy could be needed.

In chronic otitis media

In chronic destructive middle ear disease, the facial nerve trunk may be exposed if its bony covering is eroded by cholesteatoma or by granulation tissue and osteitic disease in ears without cholesteatoma.

Treatment

Urgent operative exploration of the middle ear and mastoid region is mandatory to treat the chronic middle ear disease, proceeding if necessary to a radical mastoidectomy. Than facial nerve should be carefully exposed.

Suppurative labyrinthitis and serous labyrinthitis

Clinical features

A patient suffering from acute or chronic middle ear infection presents with violent prostrating vertigo and vomiting. Severe hearing loss of a sensorineural type is to be expected but will be adumbrated by the severe disabling vertigo, especially if there has been a preceding conductive impairment from middle ear disease. The patient lies immobile, on the side with the infected labyrinth upwards, avoiding any head movement.

Diagnosis

The clinical pattern described above is the same as that of sudden vestibular failure from any cause and suspicion of suppurative labyrinthitis primarily rests with precise recognition of the underlying middle ear infection.

Management

Treatment of suppurative labyrinthitis requires complete bed rest. Head movements should be avoided as much as possible. Vertigo and vomiting may be controlled by parenteral prochlorperazine or cinnarizine. If vomiting prevents hydration, Intravenous fluids must be infused. It is has been customary to recommend the administration of parenteral antibiotics.

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Nutritional status of depressive patients : A study in an urban hospital, Bangladesh

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Abstract

In order to find out the nutritional status of depressive patients a consecutive total 80 unipolar depressive patients diagnosed on the basis of DSM-IV attending for the first time in the psychiatric out-patients department of a tertiary hospital, Dhaka, Bangladesh, was included in the sample. These patients did not received any antidepressant drugs. They had depression for 6 weeks to 6 months. All subject underwent clinical examination along with anthropometric measurement of height, weight, mid arm circumference and triceps skinfold thickness. Distribution of depressive illness was 61.25% in the age group of 25-44 years (mean 39.62±10.54). The Females were predominated than males (M:F=1:2.63), more than 77% of the patients had monthly income below Taka 10,000/- (US\$ 200) per month. This illness occurred more in married, household workers with up to primary educated people predominantly residing in urban areas.

The mean BMI of male patients was 19.95 ± 2.82 and female was 20.54±3.13. The mean percentage of body mass index (PBMI) of both sexes were 90.67 ± 12.75 and 99.33±15.3 respectively. The BMI and PBMI of both male and female patients were within lower normal limit.

The mean mid arm circumference of male & female Patients were 21.88 ± 1.55 and 21.52 ± 1.44 respectively which is about 70% of WHO standard. The mean triceps Skinfold thickness of both group were 7.59 ± 0.89 and 10.01 ± 1.32 respectively, which is only 60% of WHO standard.

In this prospective study it was found that depressive illness occurred in economically productive period of life within subsistence living. The BMI and PBMI of depressive patients showed lower normal limits. The mean triceps skinfold thickness and mid arm circumference were below WHO Standards. Finding showed that the nutritional status of these group of patients are not adequate.

Introduction

The prevalence of depressive illness in Bangladesh was 2.9% for males and 11.6% in females¹. In India the Prevalence of depressive illness was 2-5%^{2,3}. In western countries it is about 3-5% for men and 6-8% for woman⁴. In USA the life time prevalence of depressive illness is about 6%⁵.

The causes of depression are multi factorial. In Bangladesh the potential causes may be due to¹ psycho social, social-economical and political instability and² wide spread malnutrition (only 6% are nourished)^{6,7} incase of

Predisposed persons. It is established that 4 out of 5 depressive illness.^{8,9,10} Thus these patients undergo profound alterations in metabolism with subcutaneous fat loss and muscle wasting¹⁶⁻¹⁸. Less intake of food with subsequent weight loss may change central mono aminergic functions eg, serotonin which may cause some of the neurochemical of endocrinological disturbances seen in depression.^{19,20} It has been observed that significant relationships decreased appetite/ weight loss and serotonegic probes L tryptophan availability to the brain and hypothalamic pituitary-thyroid axis function in depression.²⁰⁻²². Though the condition is insidious but anorexia followed by weight loss may occur after sometime with individual variations.

In reviewing the above literatures, we found that it would worthwhile to study the anthropometric nutritional status and depressive illness.

Materials and methods

This prospective study was done in the psychiatric out patient department of Mitford Hospital (Tertiary), Dhaka, Bangladesh during the period of January of September 1998. A consecutive total number of 80 unipolar depressive patients was selected purposively and diagnosed according to diagnostic criteria form Diagnostic and Statistical Manual -IV (DSM - IV)¹¹. Both male and female patients aged 15-64 years were included. The following criteria was used for inclusion of patients: 1. no previous history of taking antidepressant drug. 2. duration of suffering between 6 weeks to 6 months. 3. absence of physical illness and 4. no history of substance abuse.

Anthropometric measures such as body weight in kg/ height in M, triceps skinfold thickness in mm and mid arm circumference in cm were taken from all patients. From weight and height we computed body mass index (BMI) and percentage of body mass index (PBMI). Mean and SD were used to interpret the result.

Table-1 Distributions of age, sex and residence of depressive patients (N=80)

Age group	Male		Female		Total		Urban		Rural		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
15-24	2	2.5	3	3.75	5	6.25	3	3.75	2	2.5	5	6.25
25-34	6	7.5	16	20	22	27.5	12	15	8	10	22	25
35-44	7	8.75	20	25	27	33.75	17	21.25	12	15	27	36.25
45-54	5	6.25	14	17.5	19	23.75	12	15	7	8.75	19	23.75
55-64	2	2.5	5	6.25	7	8.75	4	5	3	3.75	7	8.75
Total	22	27.5	58	72.5	80	100	48	60	32	40	80	100

Male : Female = 1:2. 63
X = 39.62, SD = 10.54

Urban : Rural = 1:0. 66

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Table 2 : marital status of urban and rural depressive patients (N=80)

Marital Status	Urban		Rural		Total	
	No	%	No	%	No	%
Married	28	35	19	23.75	45	65.25
Unmarried	3	3.75	1	1.75	4	5
Separation	6	7.5	3	3.75	11	13.75
Widow	7	8.75	6	7.5	13	16.25
Divorced	4	5	3	3.75	7	8.75
Total	48	62.5	32	37.5	80	100

Table-3 : trend of literacy - urban : rural (N=80)

Literacy	Urban		Rural		Total	
	N	%	N	%	N	%
Illiterate	18	22.5	20	25	38	47.5
Primary	12	15	5	6.25	17	21.25
Secondary	10	12.5	4	5	14	17.5
SSC & HSC	5	6.25	2	2.5	7	8.75
Graduate & post graduate	3	3.75	1	1.25	4	5
Total	48	60	32	40	80	100

Table-4 : distribution of occupation of urban and rural depressive patients (N=80)

Occupation	Urban		Rural		Total	
	N	%	N	%	N	%
House hold workers	21	26.25	15	18.75	36	45
Service	11	13.75	5	6.25	16	20
Labour / worker	6	7.5	3	3.75	9	11.25
Petty business	7	8.75	4	5	11	13.75
Student	3	3.75	2	2.5	5	6.25
Cultivator	0	0	3	3.75	3	3.75
Total	48	62.5	32	37.5	80	100

Table-5 : monthly income of urban and rural depressive patients (N=80)

Income	Urban		Rural		Total	
	N	%	N	%	N	%
<4000	4	5	17	21.25	21	26.25
4000 -9900	29	36.25	12	15	41	51.25
10000-14900	10	12.5	2	2.5	12	15.0
>15000	5	6.25	1	1.25	5	7.5
Total	48	60	32	40	80	100

Table-6 : mid arm circumference and triceps skinfold thickness of male and female depressive patients by age (N=80)

Age Group	Mid arm circumference (cm)				Triceps skinfold thickness (mm)			
	Male		Female		Male		Female	
	No	X _±	No	X _±	No	X _±	No	X _±
15-24	2	20.7	3	19.8	2	7.75	3	10.16
		2.4		1.7		0.93		0.28
25-34	6	21.8	16	21.9	6	7.8	16	10.09
		2.3		1.7		0.93		1.41
35-44	7	23.5	20	22.4	7	7.92	20	10.15
		1.6		2.2		0.78		1.98
45-54	5	22.4	14	22.2	5	7.2	14	9.53
		1.6		1.7		0.83		1.59
55-64	2	21.0	5	21.3	2	6.5	5	8.3
		2.0		1.9		0.7		2.16
Total	22	*21.88	58	*21.52	22	†7.59	58	†10.01
		1.55		1.44		0.89		1.32

*70% of WHO Standard.²⁶†60% of WHO Standard.²⁶

Table-7 : body mass index and percentage of body mass index male and female depressive patients by age (N=80)

Age Group	Body mass index (BMI)*				Percentage body mass index (PBMI)*			
	Male		Female		Male		Female	
	No	X _±	No	X _±	No	X _±	No	X _±
15-24	2	18.63	3	19.36	2	84.29	3	94.0
		1.82		1.09		8.25		5.32
25-34	6	19.36	16	20.59	6	88.62	16	99.95
		3.59		3.46		16.13		17.38
35-44	7	21.38	20	21.2	7	97.02	20	102.04
		2.48		3.07		11.26		14.82
45-54	5	19.62	14	19.96	5	88.8	14	96.9
		3.15		3.29		14.28		15.99
55-64	2	18.93	5	20.08	2	85.65	5	97.47
		0.79		3.05		3.58		14.84
Total	22	19.95	58	20.54	22	90.67	58	99.33
		2.82		3.13		12.75		15.3

$$*BMI = \frac{Wt. \text{ in Kg}}{Ht. \text{ in m}^2}$$

Interpretation:

<80-lean

80-120-normal

> 120- obese

$$*PBMI = \frac{BMI \times 100}{\text{Standard BMI (a)}}$$

(a) Male 22.1

Female 20.6

Result

In table -1 it was observed that distribution of depressive illness was 61.25% of both sexes in the age group of 25-44 years and the mean age was 39.62 ± 10.54 . More depressive patients (60%), were in urban area and Urban-rural ratio was 1:0.66. Female patients were predominated and male-female ratio was 1:2.63.

Table -2 showed that more depression among married patients (45%), followed by widow / widower (13%) and separated couple (11%). Depression was found 47.5% in illiterate people in table-3. It was found in table-4 that depressive illness was more in case of household workers (45%), followed by service holders (20%) and petty businessmen (13.75%). Table-5 showed that depression was more among the people of monthly income Tk. 10,000/- (US\$ 200).

It was observed in table-6 that mean mid arm circumference of male and female patients were $21.88 \text{ cm} \pm 1.55$ and $21.52 \text{ cm} \pm 1.44$ respectively. The mean triceps skinfold thickness of both sexes were $7.59 \text{ mm} \pm 0.89$ and $10.01 \text{ mm} \pm 1.32$ respectively.

In table -7 it was found that mean body mass index (BMI) of male and female patients were 19.95 ± 2.82 and 20.54 ± 3.13 respectively. The mean percentage of body mass index (PBMI) of both groups were 90.67 ± 12.75 and 99.33 ± 15.3 respectively.

Discussion

From this study we notice that depressive illness is more among the women in the age groups of 25-44 years which is similar to other studies.^{5,11,23,24} We observed that depression is more in the lower and middle socioeconomic groups and among the urban dwellers which is consistent to other studies.^{2,3}

Depressive illness is more among married women^{3,5,11,23,25} which is similar to present studies. Household (house wives) workers are more prone to develop this illness which is consistent to other studies.^{23,25} Depressive patients are found more among illiterate and primary educated people in our study which is similar to other studies.^{3,23}

The mean BMI and PBMI of newly diagnosed patients are within lower normal limits. And so was mid arm circumference, This is 70% of WHO standard.²⁶ The mean triceps skinfold thickness was also in the lower normal limit and fall to 60% of WHO standard.²⁶

Conclusion

It was observed that depressive illness mostly occurred on economically productive period of life, within subsistence living. The mean BMI and PBMI of newly diagnosed depressive patients were at lower normal level. The mean mid arm circumference and triceps skinfold thickness were also with lower normal limit and showed 60% and 70% of WHO standard respectively. Finding of the study suggests that nutritional status of these patients started deteriorating.

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Letter

Telpathology in Bangladesh.

The Orion 2003; 14 : 49

Mostafa M G¹, Learmonth G M²

To the Editor

We would like to report our experience in the practice of telpathology in Bangladesh. Telepathology is the practice of pathology at a remote site using images (macro- microscopy) transmitted by a variety of telecommunication systems. Digital images of clinical images, radiological images and other relevant

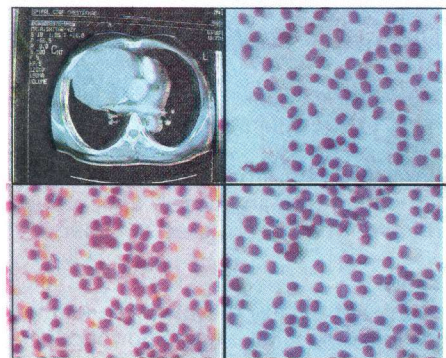


Fig: A 42 year old male with an anterior mediastinal mass. CT guided FaNAC is done. On the basis of the cytologic material a diagnosis of Primitive Neuroectodermal Tumour (PNET) is made and sent for a second opinion. The experts also opined as PNET.

images are sent to a consultant in abroad by telecommunication system. The images are interpreted by the consultant and the opinion of the consultant is sent to the originating Pathologist. The originating Pathologist then takes necessary action for informing the referring physician and the patient. One hundred five Fine Needle Aspiration Cytology samples of different organs were randomly

selected over a period of four months. These were examined and diagnosed by a Primary Cytopathologist (P) at Dhaka. For each case four to twenty images were selected and captured by the Primary Pathologist by a digital camera. The images were in JPEG format and then the images were sent to another expert cytopathologist in Bristol (A) by e-mail. The history of the Patient was sent as an attachment file. The Cytopathologist (A) sent her diagnosis to the Cytopathologist (P) by e-mail mostly within 48 hours.

The samples included results are compiled. Of the 105 cases 49 were lung aspirate, 17 were liver aspirate, 14 were lymph node aspirate, 9 were breast aspirate, 12 were aspirate of swelling of different kinds, 2 from gall bladder mass aspirate and 2 were mediastinal mass aspirate.

The diagnosis of the Cytopathologist P was 83 malignant and 22 benign. Of the 83 malignant aspirates the cytopathologist A diagnosed 81 aspirate as malignant and the rest two were inadequate. Out of the 22 benign aspirate the Cytopathologist A diagnosed 16 aspirate as benign. The rest were malignant according to her.

The sensitivity and specificity was calculated considering the diagnosis of primary cytopathologist as gold standard. The sensitivity was 97.79% and specificity was 72.72%.

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Infection prevention practices during normal labour and childbirth

The Orion 2003; 14 : 50-52

Dewan F¹

Infection prevention

Definition

Infection Prevention is the process which prevents spread of organism capable of producing disease in the health care facility.

Objectives

- ◆ To prevent major infections while providing services
- ◆ To minimize the risk of transmitting serious infections (e.g. hepatitis B and C and HIV) from or to:
 - Clients
 - Health care providers
 - Other staff, including cleaning and house keeping personnel

Causes of infection

- ☐ If hands are not washed properly.
- ☐ If delivery is done in an unclean place.
- ☐ If unsterile hands or instruments are introduced into the vagina during delivery.
- ☐ Repeated vaginal examination in an unhygienic manner.
- ☐ Prelabour rupture of membrane or rupture of membrane following prolonged labour.
- ☐ Prolonged labour.
- ☐ Episiotomy perineal tear.
- ☐ Retained bits of placenta.
- ☐ PPH.
- ☐ To put anything unsterile on the umbilicus.

To prevent infection by maintaining strict asepsis

- ☐ By practicing hand washing frequently and when required.
- ☐ **By practicing 3 cleans.**
 1. Clean surface.
 2. Clean hands.
 3. Clean cord cutting.
- ☐ Restricted pervaginal examination.
- ☐ Appropriate use of prophylactic or therapeutic antibiotics.

Principles of Infection Prevention

- ◆ Consider every person (client or staff) infectious
- ◆ Wash hands - It is most practical procedure for preventing cross-contamination (person to person).
- ◆ Wear gloves before touching anything wet, broken skin, mucous membranes, blood or other body fluids (secretions or excretions) or soiled instruments and other items.
- ◆ Use physical barriers (protective goggles, face masks and aprons) if splashes and spills of any body fluids (secretions or excretions) are anticipated.
- ◆ Use safe work practices:

1. Not recapping or bending needles.
2. Safely passing sharp instruments.
3. Properly disposing of medical waste.
4. Isolate patients only if secretions (airborne) or excretions (urine or feces) cannot be contained.
5. Process instruments and other items (decontaminate, clean, high level disinfect or sterilize) using recommended infection prevention (IP) practices¹.

Protective Barrier

Placing a physical, mechanical or chemical "barrier" between microorganisms and an individual, whether a client, patient, or health worker, is an effective means of preventing the spread of disease. The barrier serves to break the disease transmission cycle.

Barriers

- ◆ Hand washing.
- ◆ Wearing gloves, either for surgery, pelvic examinations, IUD insertions, or to protect clinic staff when handling contaminated waste materials or used instruments.
- ◆ Using antiseptic solutions for cleaning wounds or preparing the skin prior to surgery.
- ◆ Decontaminating, cleaning and sterilizing or high-level disinfecting surgical instruments, reusable gloves and other items.

Handwashing

Handwashing is the simplest and most important infection prevention procedure. It removes microorganisms from the skin, which helps to prevent transmission of infections from person to person.

Wash hands

- ◆ Before and after examining any client (direct contact).
- ◆ After removing gloves because gloves may have holes in them.
- ◆ After exposure to blood or any body fluids (secretions and excretions), even if gloves were worn.

Routine hand washing steps

- ◆ Remove jewelry:
- ◆ Use a plain antiseptic soap.
- ◆ Vigorously rub lathered hands together for 10-15 seconds.
- ◆ Use a soft, thick stick to clean nails when grossly contaminated and at the beginning and end of the clinic session.
- ◆ Rinse with clean running water from a tap or bucket
- ◆ Air dry hands or dry them with an unused, dry portion of a clean cotton towel which is not used by others.

Surgical handscrub steps

- ◆ A three to five minute handscrub with a solution containing chlorhexidine or an iodophor is recommended.
- ◆ Alternatively, surgical staff can wash hands with plain soap, then apply alcohol solution containing an emollient and rub until dry.

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- ◆ Use 3-5ml for each application and continue rubbing the solution over the hands for about two minutes, using a total of 6 to 10 ml per scrub.

Gloving for protection from infection

Gloves are used to protect the health care provider from contact with potentially infectious substances and to protect the client or patient from infections which might be found on the skin of the health care provider.

Points of contact where infection can be introduced include

- ◆ Pelvic examination.
- ◆ Contact with any lesions.
- ◆ When handling contaminated materials.
- ◆ When cleaning instruments, equipment, and contaminated surfaces.

Wear gloves

- ◆ When performing a proceeding such as blood drawing, starting I.V infection pelvic examination, manual vacuum aspiration, D&C etc.
- ◆ When handling soiled instruments, gloves and other items.
- ◆ When disposing of contaminated waste items (cotton gauze and dressing)
- ◆ Wear protective, face masks and apron
 - During all childbirth
 - If splashes and spills of any body fluids are likely

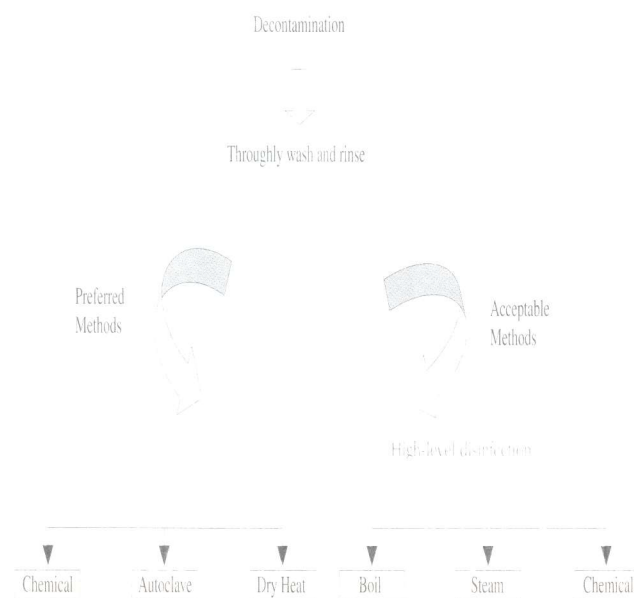
Handling sharp instrument and needles

- ◆ Leave sharp instrument or needles only in "safe zones".
- ◆ Tell other workers before passing sharps.
- ◆ Use each needles and syringe only once.
- ◆ Do not recap, bend or break needles before disposal.
- ◆ Dispose of needles and syringes in a puncture proof container.

Processing soiled instruments and other items²

Decontamination

Decontamination is the first step in handling used (soiled) instruments and gloves. Supplies needed for decontamination include: water, a plastic or enamel pail, measures cup and chlorine.



Principles

- ◆ Inactivates HBV and HIV.
- ◆ Makes items safer to handle.
- ◆ Must be done before cleaning.

Procedure for decontamination

- ◆ Wear protective gloves.
- ◆ Submerge items in chlorine bleach solution (0.5% chlorine solution) for 10 minutes. Do not submerge metal for more than 20 minutes.
- ◆ Remove the items, rinse immediately with cool water to prevent corrosion, and clean in routine manner.

1 litre water + 20gm bleaching powder

15 litres water +300 gm bleaching powder

Cleaning

- ◆ Cleaning instruments is necessary before high-level disinfections or sterilization to remove all visible foreign material and some microorganisms.
- ◆ Dried organic materials can entrap microorganisms in a residue that shields them against sterilization or chemical disinfections. It also reduces the load of bacteria.
- ◆ Supplies needed for cleaning are: detergents or soap, brushes of various sizes and types, protective gloves, and basins or sinks for detergent solution and rinsing.

Procedures for cleaning³

- Wear protective gloves.
- Rinse the items in cool water, opening or disassembling them when possible.
- Submerge them in a basin with detergent and water. make suds as you would for dishes.
- Use brushes (a tooth brush works well) to remove soiled matter, paying attention to interior and hinged areas.
- Rinse thoroughly in clean water.
- Dry by air or clean towels before further processing.
- Maintain cleaning supplies and equipment in dry, clean condition.

Disinfection

Disinfection is the process that eliminates most, but not all disease causing microorganisms from inanimate objects.

High level disinfection

Principles:

- Destroys all micro organisms including HBV and HIV does not reliably kill all bacterial endospores.
- Only acceptable alternative when sterilization equipment is not available.

High level disinfection-boiling

It kills most or many disease producing microorganisms, including viruses which may cause hepatitis B or AIDS except for endospores.

Practices

- Boil instruments and other items for 20 minutes (sufficient up to 5500 meters/18,000 ft).
- Always boil for 20 minutes in pot with lid.
- Start timing when water begins to boil.
- Do not add anything to pot after timing begins.
- Dry by air before use or storage.

Chemical high level disinfectionPractices

- Cover all items completely with disinfectant.
- Soak for 20 minutes (in Glutaraldehyde).

- Rinse with boiled water.
- Air dry before use and storage.

Sterilization

The sterilization process ensures that all microorganisms, including bacterial endospores, are destroyed.

Principles

- Destroys all microorganisms including endospores.
- Used for instruments, gloves, and other items that come in direct contact with blood stream or tissue under the skin.

Practices:

- **Steam sterilization (autoclave):**
121°C (250 °F); 106 kPa (15 lbs/inch²) pressure: 20 minutes for unwrapped items, 30 minutes for wrapped items.
Allow all items to dry before removing.
- **Dry-heat (oven):**
170 °C (340 °F) for 1 hour, or 160 °C (320°F) for 2 hours
- **Chemical Sterilization:**
Soak items in glutaraldehyde for 8-10 hours or formaldehyde for 24 hours.
Rinse with sterile water.

Infection prevention practices during labour

- Use disposable materials once and decontaminate reusable materials throughout labor and childbirth.
- Wear protective clothing (shoes, apron, glasses)
- Wash hands.
- Wear gloves during vaginal examination, during birth of newborn and when handling placenta.
- Wash woman's perineum with soap and water and keep it clean.
- Ensure that surface on which newborn is delivered is

kept clean

- High level disinfect instruments, gauze and ties for cutting cord

Safe Waste Disposal

Objectives

- To prevent spread of infection to clinic personnel who handle waste.
- To prevent spread of infection to local community.
- To protect those who handle waste from accidental injury.

Practices

- Wear utility gloves while handling contaminated waste.
- Place contaminated items (gauze or cotton) in leakproof covered containers or plastic bag.
- Dispose of all sharp items in puncture proof containers.
- Dispose of contaminated solid waste by incineration or burial.
- Wash hands, gloves and containers after disposal of infection.

Conclusion

Infection accounts for 14.9% of maternal death⁴. Hence principles of infections prevention practices should be followed meticulously in order to protect the service provider and minimize the risk of transmitting serious infection among patients.

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MSD NEWS

MSD personnel of ORION Laboratories and ORION Infusion Ltd. spent a busy schedule in last quarter of 2002, in arranging seminars in different venues as a part of continued medical education program.

Seminar on Acute Coronary syndrome

Venue : Cardiology Department, DMCH

A seminar was arranged by Orion Lab Ltd. on acute coronary syndrome on September, 15 2002 at cardiology department, DMCH. Dr. Sirajul Haque, Asst. professor, cardiology, DMCH was the key note speaker of the seminar. The seminar was chaired by Dr. Rajia Sultana Mahmood, associate professor, department of cardiology, DMCH.

Seminar on allergy management

Venue: Skin & VD Department, BIRDEM, Dhaka

A seminar was arranged by MSD, Orion Lab. Ltd. at Department of Skin and VD, BIRDEM on September, 23, 2002 on 3rd Generation Antihistamine-DESLOR, A break through in allergy management. The seminar was chaired by Prof. Hasan Mahmud Khan.

Venue: Agrabad Skin & VD Hospital (American Hospital), Chittagong :

A seminar was arranged by MSD, Orion Lab. Ltd. on September, 24, 2002 on 3rd Generation Antihistamine-DESLOR, A break through in allergy management. The seminar was chaired by Dr. Didaruzzaman, Consultant, Skin & VD Hospital, Chittagong.

Venue: Asparagus, restaurant

A seminar was arranged by MSD, Orion Lab. Ltd. on September, 25, 2002 on 3rd Generation Antihistamine-DESLOR, A break through in allergy management at Asparagus restaurant.

Venue: Department of ENT, BIRDEM, Dhaka

A seminar was arranged by MSD, Orion Lab. Ltd. at Department of ENT and Head & Neck Surgery, BIRDEM on September, 27, 2002 on 3rd Generation Antihistamine-DESLOR, A break through in allergy management Dr. Zaheer Al-Amin, Associate Prof & Head, Department of ENT, and Head & Neck Surgery was the key-note speaker of the seminar.

Venue: NHN, Basaboo

A seminar was arranged by MSD, Orion Lab. Ltd. at NHN Basaboo on September, 27, 2002 on 3rd Generation Antihistamine-DESLOR, A break through in allergy management.

Venue: OPD, BIRDEM

A seminar was arranged by MSD, Orion Lab. Ltd. at OPD, BIRDEM on September, 29, 2002 on 3rd Generation Antihistamine-DESLOR, A break through in allergy management.

Venue: Department of Dermatology & STD, CMCH

A seminar was arranged by MSD, Orion Lab. Ltd. at Department of Dermatology and STD's Chittagong Medical College on 3rd Generation Antihistamine-DESLOR, A break through in allergy management on September, 30, 2002 at class room. The seminar was chaired by Dr. Monsurul Alam, Asst. Prof. Department of Dermatology and STD's, CMCH. Dr. Purobi Ghosh, Deputy Director; CMCH was present as the chief guest in the seminar.

Venue: Lion's eye hospital

A seminar was arranged by MSD, Orion Lab. Ltd. at Lion's eye hospital on November, 05, 2002 on 3rd Generation Antihistamine-DESLOR, A break through in allergy management. Dr. Shah Md. Bulbul Islam, Chief consultant cum director, Lions eye hospital, Agargaon, delivered the vote of thanks.

Recent developments in medicine : A review

Musa A K M¹

The Orion 2003; 14 : 53-55

Medicine is the most dynamic of biologic discipline. There has been tremendous developments in various fields of medicine recently. This update summarizes important development during the recent past year concerning clinical problem frequently encountered by practicing internists. I have covered many topics in this article and a vast remain untouched.

Cardiology

Ischemic heart disease by far the most common form of heart disease in adults. There has been developments in its diagnosis and treatment. The various noninvasive procedures for diagnosing IHD has been summarized^{1,2,3,4,5}.

Table 1: Non invasive recent investigation for detecting myocardial viability.

Procedure	Method	Comment
A. Cardiac Scintigraphy	Myocardial perfusion scan both at rest and after exercise can be obtained by using thallium or technetium (Photograph given)	Detect Significant coronary artery disease from 70-80% with specificity from 80-90%.
B. Stress echo cardiography	Echo sequences are obtained at rest and compared to gated sequences after stress. Stress images are taken after exercise or following administration of dobutamine, adenosine or dipyridamole (which may induce ischemia)	Sensitivity similar to above procedure.
C. Coronary magnetic resonance angiography	Non-invasive visualization of the major epicardial coronary arteries in the majority of subjects.	This procedure reliably identifies (or rules out left main coronary artery or 3 vessel disease.)

Cardiac markers : Ck-MB has until recently been the principal serum cardiac markers used for evaluation of acute

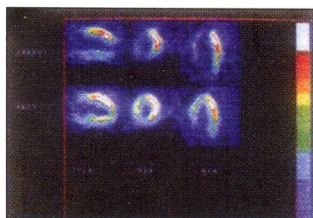


Figure 1- Myocardial perfusion scan during stress and at rest. The scan shows anteroapical myocardial perfusion defect present during stress.

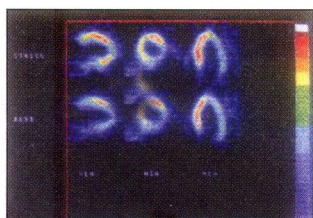


Figure 2- Myocardial perfusion scan showing inferior myocardial perfusion defect present during stress and at rest.

coronary syndrome. Recently, cardiac specific Troponin T (CTnT) and cardiac specific troponin I (CTnI) and also myoglobin estimation has been introduced.

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Table 2 : Cardiac Markers Recently Introduced^{4,5,6,7,8,9,10,11,12,13,14}

Therapy for acute coronary syndromes: Reperfusion therapy early restoration of perfusion reduces infarct size, preserves LV function and reduces mortality.

Marker	Advantage	Disadvantage	Comment
1. Cardiac troponins	1. Powerful tool for risk stratification	1. Low sensitivity in very early phase (<6hr).	Useful as single test to diagnose NSTEMI (including minor myocardial damage)
	2. Greater sensitivity and specificity than CK-MB 3. Detection of recent MI upto 2 weeks after onset. 4. Useful for selection of therapy. 5. Detection of reperfusion.	2. Limited ability to detect late minor reinfarction.	
2. Myoglobin	1. High Sensitivity 2. Useful in early detection of MI. 3. Detection of reperfusion. 4. Most useful in ruling out MI.	Very low specificity in setting of Skeletal muscle injury or disease.	More convenient early marker Should not be used as only diagnostic marker

Table 3 : Reperfusion therapy for Acute Coronary Syndrome^{4,5,8,11}.

Therapy	Comment
A. Fibrinolytic therapy	Can be considered in all patients with established disease who present within 12 hrs and have no contraindications.
B. Primary PTCA	Preferred strategy for patients with contraindication to fibrinolytic therapy and for those in cardiogenic shock.
C. Emergency CABG	In refractory Ischaemia or in cardiogenic shock whose coronary artery is not suitable for PTCA or in whom PTCA has failed and in patients with mechanical complication of myocardial infarction

Newer drug has been introduced for the treatment of IHD.

Heart failure:

There has been dramatic change in the understanding of pathophysiology of heart failure¹⁹. Once beta blocker was considered as contraindications to use in heart failure, now

Table 4 : Newer drugs in the treatment of Ischaemic heart disease.

Group	Use
1. Low molecular weight Heparin (LMWH)	As effective as unfractionated Heparin (UFH) and convenient to use. Can be useful in unstable angina and following thrombolytic therapy.
B. Clopidogrel	Newer antiplatelet drugs, alternative to patients who are allergic to aspirin. Can be used alone also along with aspirin
C. GPIIb/ IIIa receptor antagonist-	Monoclonal antibodies to glycoprotein II b/ IIIa platelet receptor (the final common pathway of platelet aggregation. Example abciximab, used as an adjunct in invasive coronary intervention and as primary medical therapy for CAD.
D. Potassium channel activator	Example Nicorandil 10-30 mg 12 hrly orally have arterial venous dilating properties. Used when nitrates cannot be used and in refractory Angina.

proved to be beneficial. The role of spironolactone has been established in heart failure not only as K⁺ sparing diuretics but also as neuro hormonal antagonist, so also modifier of myocardial remodeling and fibrosis^{15, 16}.

Table 5 : Drugs useful for treatment of heart failure^{15,16,17,18,19,20}.

Group	Use
A. Drugs with proven prognostic benefit	ACE inhibitors (or angiotensin II receptor blocker) betablocker spironolactone hydralazine plus nitrate
B. Drugs useful for symptom relief and may improve outcome	Loop diuretics digoxin antiarrhythmic anticoagulant

Gastroenterology

- A. Upper gastrointestinal hemorrhage^{4,5,22}.
There has been tremendous developments in the control of upper GIT bleeding. Bleeding peptic ulcers can be controlled by various endoscopic means including laser therapy, heater probes or by injection of adrenaline (1 in 10,000).
- B. Achalasia can be managed by botulinum toxin injection via endoscope.
- C. *Helicobacter pylori*: In addition to its strong association with peptic ulcer disease, *H. pylori* is now recognised as carcinogen and linked with the developments of adenocarcinoma in the distal stomach. Long term cure of peptic ulcer disease may be achieved by eradication of *H. pylori*^{4,5,22}.
- D. Coeliac disease: Can be diagnosed by estimation of IgA endomysial antibody (sensitivity 70%)
- E. Crohn's disease: Cigarette smoking clearly predisposes to the disease and stopping smoking reduces frequency and severity of relapse. Infliximab has been proved for control of active disease.
- F. Autoimmune liver disease. Primary biliary cirrhosis can be diagnosed without doing diagnostic histology by testing M₂ fraction of antimitochondrial antibody.

- Ursodeoxycholic acid 750mg (13mg/kg) daily is now the standard treatment for patients with primary biliary cirrhosis (PBC) who are not in end stage disease.
- G. Viral hepatitis: Viral hepatitis is the major cause of chronic liver disease worldwide.

Table: 6 Treatment of chronic viral Hepatic^{4,5,22,23}.

Type	Agent	Dose	Comment
Chronic HBV	Interferon - alpha 2b	5 million units S/c 3 times a week for 16 weeks.	Seroconversion and improved survival occur in 20-30%.
	Lamivudine	100mg orally daily for 1year. 100 mg orally daily for 3year.	Response rate of 20-30% Response rate of 40-65%.
Chronic HCV	Combination of Interferon - alpha 2b + ribavirin Pegylated IFN (Peg interferon)	3 million units S/c 3times/week for 1 year. 800-1200mg/day for 1yr. 180 micro gram S/c once weekly for 24-48weeks should be given e ribavirin.	Response rate upto 30-60% Response rate higher.

Respiratory medicine

- A. **Chronic obstructive pulmonary disease:** Recent trials shown that inhaled corticosteroid do not prevent progressive decline in lung function in COPD. Surgery to reduce lung volume is a promising intervention for emphysema.
- B. **Bronchial asthma:** Leukotriene blocking agents are a new class of drugs which have bronchodilator and anti inflammatory properties in asthma. Monteleukast and Zafirlukast are more widely available preparation. Effective when added to low dose of inhaled steroids and also in patient who still have symptom taking high doses of inhaler steroids.
- C. **Lung cancer:** Positron emission tomography is a new highly sensitive and specific diagnostic tool for staging lungs cancer. PET has recently been shown to be superior to conventional staging is determining local, regional and hematogenous spread of a tumor.

Rheumatology

The treatment of rheumatoid arthritis has been improved by introduction of newer agents of newer disease modifying drugs. Cox-2 inhibitor drugs can also be used as pain relieving agents²⁶.

Diabetology:

Newer antidiabetic drugs are available. The concept of combination therapy with different oral antidiabetic drugs or insulin plus oral antidiabetic drugs is an established treatment now days.

Table 7: Newer disease modifying antirheumatic drugs ^{4,5,25}

Agent	Mechanism of action	Dose	Comment
Lamivudine	Pyrimidine antagonist that blocks the enzyme dihydrofolate dehydrogenase blocking the synthesis of DNA.	100mg daily bd for 3 days followed by 20mg daily.	Teratogenic diarrhoea rash hepatitis alopecia
Etanercept	Binds to TNF alpha, blocking its interactive cell surface receptor and hence inhibiting the inflammatory and immunoregulatory properties of TNF	25mg S/c injection twice a week.	Serious infection sepsis
Infliximab	Is a chimeric monoclonal antibody that binds specifically to human TNF alpha blocking its proinflammatory action	Along with MTX infusion of 3mg/kg given at initially 2nd, 6 weeks and every 8 weeks. there after	Infection and sepsis.

Table 8 : Newer oral antidiabetic drugs ^{5,27}

Group	Agent and dose	Mechanism of action
A. Meglitinide analogs	Repaglinide .5-4mg with each meal. Nateglinide 60-120 mg with each meal	Increase insulin secretion by closure of K ⁺ -ATP channel in beta cells. Short acting agent that promotes insulin secretion in response to meal
B. Thiazolidinediones	Rosiglitazone 4-8 mg/day Pioglitazone 15-45mg /day	Reduce insulin resistance. Increase insulin mediated glucose up take.
C. Alpha-glucosidase inhibitor	Acarbose 25-100mg/day with meal	Acts on intestinal enterocytes inhibits enzymatic cleavage of oligosaccharides

Psychiatry

Newer antipsychotic, and antidepressant drugs are now available.

Table: 9 Newer antipsychotic drugs. ^{4,5,6,29}

Group	Drug	Meal	Comment
Substituted benzamide	Sulpiride	600-1800mg daily	Lower incidence of extrapyramidal side effects. 3% pts develop blood dyscrasia
Dibenzodiazepines	Clozapine	25-900 mg/daily	
Benzisoxazoles	Risperidone	2-16mg daily	
Thienobenzodiazepine	Olanzapine	5-20 mg daily	

Infectious disease:

a) Tuberculosis is the single biggest killer of young people and of woman in the world. WHO recommended

Table 10 : Newer antidepressant drugs

Group	Drug	Meal	Comment
SSRI (Selective serotonin receptor inhibitor)	Fluoxetine fluvoxamine sertraline	Fluoxetine fluvoxamine sertraline	Lower incidence of extrapyramidal side effects. 3% pts develop blood dyscrasia
SNaRI (Serotonin and noradrenaline reuptake inhibitor)	Venlafaxine		Less sedative, fewer anti cholinergic s/e, once daily dose, no significant side effect.

DOTs (directly observed therapy short course) strategy to combat tuberculosis. Fixed dose combination makes 6 months short course treatment easier. It will improved compliance, decreased MDR TB. ^{4,5,6}

- b) Dengue has emerged as a major health problem. Dengue is now established as most widespread mosquito borne viral illness in human. By educating people about intake of adequate fluid during febrile illness and early reporting to physician when rash or bleeding episode occur, the fatality can be diminished. There should be effort for eradication of mosquito. ^{31, 32}
- c) AIDS (aquired immune deficiency syndrome) is now the 4th commonest cause of death world wide causing over 2.5 millions deaths in 1999. Highly active antiretroviral therapy (HAART) with at least 3 drug used in combination has led to a marked decline in mortality associated with HIV infection. None of the current drug combination can eradicate HIV. ^{4,5,6,30}
- d) Malaria: Immunochromatographic (ICT) 'Dip stick' test for *plasmodium falciparum* antigen is now marketed and provided useful nonmicroscopic means of diagnosing this infection. They should be used in parallel with blood film examination ⁶

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Perioperative fluid therapy : In the context of stress response

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Fluid and electrolyte disturbances are extremely common in the perioperative period¹. On the other hand, most of the surgical patients require intravenous fluid therapy. This observation suggests that the apparently simple consideration of perioperative fluid therapy is a unique challenging issue. This is probably due to the response of the body to the surgical trauma and often-associated anaesthesia impinges critically on the care and rational approach to fluid therapy.

It is important to understand the 'stress response' of the body and particularly the impact of such response on normal fluid and electrolyte homeostasis and to appreciate some special considerations necessary for successful resuscitation and maintenance of fluid and electrolyte homeostasis.

This article attempts to examine closely and concisely these issues in the context and their relevance to fluid and electrolyte status.

In 1932, Sir David Cuthberston, a Scottish biochemist, first described the response of the body to trauma in a systematic and quantitative fashion². He described the main features of this response, which evolved with time, and which he divided into two distinct phases. The 'ebb' phase develops immediately following injury and arises primarily because of a decreased cardiac output, which limits perfusion. In 1979, he further claimed that the initial 'ebb' phase persists only for a shorter period of time, usually less than 24 hours and with successful resuscitation, the 'ebb' phase gradually gives way to the 'flow' phase.

Depending on the severity of injury this phase, may last from 1 day to several weeks. There is a gradual increase in cardiac output as the deficit intravascular volume is corrected, from either exogenous sources and/or by transcapillary refill³. The classic metabolic response to injury now has been described as a triphasic phenomenon. The final or anabolic phase lasts for several weeks and is mainly involved in repair. Each of the three phases of the response to injury can be associated with spontaneous or iatrogenic abnormalities in fluid and electrolyte metabolism.

Neuroendocrine, Metabolic, And Humoral Response To surgery

It is now well-established that Surgery is accompanied by widespread changes in organ function^{4,5}. These functional changes are mediated by an alteration in the endocrine-metabolic milieu and activation of several biological cascade systems known as inflammatory mediators. A number of afferent stimuli vary in their relative importance, as well as in the mechanism by which they produce this response to the

surgical assault.

These stimuli include:

Haemorrhage	Tissue hypoxemia
Hypovolemia	Infection
Pain	Bacteremia
Hypoxemia	Endotoxemia.
Anaesthesia	Tissue necrosis

These afferent stimuli signal responses designed to defend intravascular volume and perfusion to vital organs besides metabolic alteration (Fig-1)

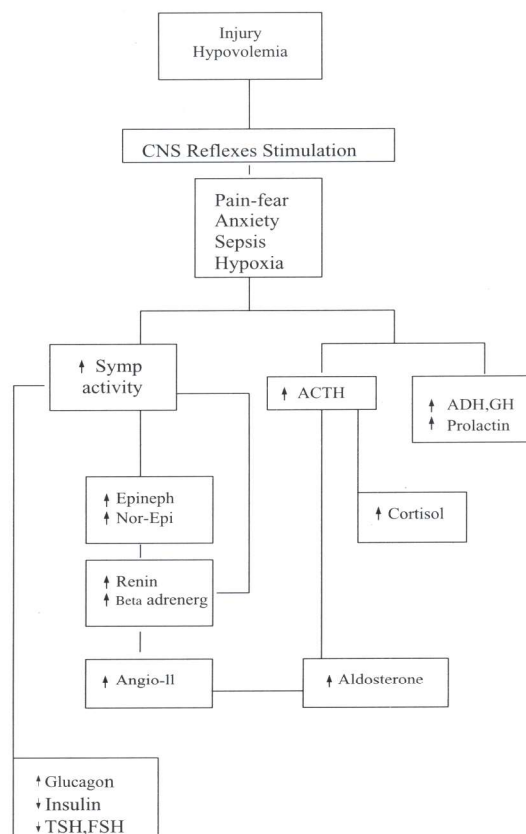


Fig 1: Schematic Illustration of the neuro-endocrine response to injury.

(modified from Drucker W.R, et al. Response to surgery. Philadelphia, J.B Lippincott, 1983:3-31)

Hypovolemia

One of the most prominent afferent stimuli is hypovolemia due either to direct loss of blood or to the sequestration of fluids at the site of a major operation.

It initiates a series of homeostatic responses directed at increasing volume and thereby preserving perfusion to vital organs such as the brain and heart. Pressure and volume receptors in the atria and large central vessel responds to the

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reduced volume with central nervous system stimulation and the hypothalamic- pituitary axis activation. There is a subsequent multihormonal response with the release of

- ◆ Adrenocorticotrophichormone (ACTH),
- ◆ Anti-diuretic hormone (ADH),
- ◆ Growth hormone (GH).
- ◆ Epinephrine & nor-epinephrine
- ◆ Renin, Angiotensin & Aldosterone
- ◆ Glucagone

Specific Neuroendocrine responses to surgical trauma

ACTH-CORTISOL : ACTH release is increased almost immediately and causes increased secretion of corticosteroids from the adrenal cortex.⁵ ACTH and cortisol levels are increased for 2 to 4 days after uncomplicated surgery but may remain elevated for weeks with extensive trauma or such superimposed complications as sepsis and shock. Up to 10 fold increases in plasma cortisol level are not uncommon. However, severe hypovolemia may result in a blunted or submaximal response, which tends to improve over several hours after injury as resuscitation restores plasma volume and flow to the adrenal cortex.⁶ Paraplegic and quadriplegic patients undergoing surgery in a denervated area do not respond to operative trauma with the usual secretion of cortisol⁷. Even though they continue to respond with an increased secretion when hypovolemia, hypotension or hypothermic supervenes. There is a difference in the action of a paraplegic patient with a blunted response and that of a patient with adrenal insufficiency.

Catecholamines

Both epinephrine and norepinephrine are secreted in response to surgical trauma and associated surgical factors like pain, anxiety and Anaesthesia. Unlike ACTH and adrenal steroid hormone release catecholamine release is short lived and return to normal within 24 hours.

The circulating plasma levels of noradrenaline is usually greater than adrenaline since the later is released from adrenal medulla while the former is released from both medulla and the sympathetic nerve endings. The increased levels of Catecholamines lead to vasoconstriction of the peripheral capillary beds, with a redirection of perfusion to the more important viscera and the central nervous system. It also causes elevation of blood pressure and cardiac output.

Renin-Angiotensin-Aldosterone

The principal factors, which lead to the release of renin from the kidney, are increased sympathetic stimulation, decreased arterial pressure and decreased delivery of sodium to the macula densa⁸. Consequent release of Angiotensin II is principally responsible for the increased secretion of aldosterone from the adrenal cortex.⁹

ADH : Increased secretion of vasopressin occurs following surgical trauma, as a result of the direct afferent neural stimuli, which eventually terminate at the hypothalamus¹⁰. Hypovolemia is an additional potent stimulus. Depending on the severity of the surgical trauma; the increased vasopressin activity persists for 3-5 days. This will be prolonged if complications such as sepsis or hypovolemia supervene. Vasopressin acts on the distal tubule and collecting ducts to increase the reabsorption of water. In the severely traumatised patients who develop

hypovolemia and hypertension, the increased release of vasopressin may increase the risk of developing acute tubular necrosis. Second potential danger associated with the postoperative elevation of vasopressin is the development of water intoxication. This can occur when large volume of non-solute containing fluid is administered during and immediately following a surgical procedure. The provision of sufficient solute in the form of sodium chloride will permit the postoperative patients to secrete an adequate urine volume in spite of the potent antidiuretic effects of vasopressin.

The preservation of an adequate circulating blood volume is one of the principal objectives of many of the metabolic changes which occur following a surgical procedure. A decreased plasma volume is corrected by a shift of water and solute from the interstitial fluid by a process known as 'transcapillary refill'. This process requires the interstitial compartment of the extracellular volume is maintained normal following a surgical procedure.

The marked alteration in water and electrolyte metabolism which take place following surgical trauma is modified by

- ◆ magnitude and duration of the operative procedure
- ◆ patient's pre-injury state
- ◆ administered anaesthetic agent
- ◆ administered fluid and electrolytes

There is a direct relationship between the magnitude and duration of stress response to the magnitude and duration of the surgical procedure. The post-operative increases in both noradrenaline and adrenaline are proportional to the magnitude of the surgical procedure.⁶ Before operation the normal individual is in salt and water balance with salt and water excretion equal to intake. Following injury, fall of urinary sodium excretion is a direct consequence of the hormonal changes produced by the injury. In addition when hypovolemia develops glomerular filtration will fall secondary to decreased perfusion pressure, resulting in additional sodium retention. Angiotensin II further decreases glomerular filtration.

Renal sympathetic nervous activity tends to increase the reabsorption of both water and sodium in the proximal tubule, decreasing net sodium excretion and leading to a defect in urinary concentrating ability⁹. In postoperative patients, expansion of the extracellular water volume can reverse this defect, suggesting that perhaps hypovolemia, presumably as a result of third space sequestration, is an important mechanism. In the distal tubule the osmotic equilibrium is maintained as sodium reabsorption is accompanied by water. However, in the collecting ducts sodium is reabsorbed in exchange for both potassium and hydrogen ions, providing one of the principal mechanisms for the excretion of acid and potassium.

Mild to moderate dilutional hyponatremia with hyperkalemia is a common occurrence in postoperative period. It will be much more pronounced with more extensive trauma or if there was a pre-existing chronic wasting illness before operation. The postoperative patient, especially following extensive surgical trauma is often alkalotic of mixed variety for several days. Severe metabolic alkalosis is classically seen in patients with gastric outlet obstruction on constant gastric suction with large losses of gastric secretion.

The last two decade has seen increasing interest in attempts to modify the hormonal and metabolic response to surgery by the newer opioids fentanyl, alfentanil and sufentanil.^{12,13,14} These works followed classical endocrinological studies that showed the ability of clinical doses of morphine to prevent stress induced ACTH secretion in man.¹⁵ The effects of potent opioids on the endocrine and metabolic changes associated with surgery are short lived, about 6-8 hours^{16,17}, and there is no evidence of any long term benefit to the patient in terms of a decrease in postoperative morbidity and mortality except in cardiac surgery. Updated information on modifying effect of regional analgesic techniques on the surgical stress response concludes that, of the various techniques available, only regional anaesthesia with local anaesthetics given intrathecally or epidurally has a major effect on the surgical stress response, and this is significant in operations on the lower part of surgery.¹⁸

Although the compensatory neuro-humoral activation is initially beneficial, it becomes deleterious in the hypovolaemic critically ill patient. Adequate restoration of intravascular volume thus remains important in managing the surgical patient. Therapy during the ebb phase is directed principally at maintaining adequate tissue perfusions by establishing a normal circulating blood volume and a normal cardiac output. With successful resuscitation the ebb gradually gives way to the flow phase. There is gradual increase in the cardiac output as the deficit in the intravascular volume is corrected, from either exogenous source and/or by transcapillary refill. As this occurs, the ebb is replaced by the flow phase of the metabolic response to trauma. The end of the catabolic phase is marked by the 'turning point' which is a distinct clinical event in the

postoperative convalescent period following major elective surgery¹¹

(The rest of the article will be published in next issue).

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Launching of new products

Orion Laboratories Ltd. has recently introduced the following five new products in the pharmaceuticals market:

Deslor

Desloratadine INN 5mg

A break-through in allergy management

Deslor (Desloratadine), the FDA approved 3rd generation, non-sedative, long acting antihistamine is indicated for the treatment of allergic rhinitis, urticaria and other allergic manifestations. Deslor is 5 times more potent than loratadine. Deslor is presented in the form of 5mg tablet. Price: MRP Tk.2.50/tab.

Venlaf

Venlafaxine 75mg

FDA approved 1st line therapy for Depression and Generalized Anxiety Disorders (GAD)

Venlaf (Venlafaxine) is a new class of antidepressant. It is a potent inhibitor of neuronal serotonin and norepinephrine reuptake and weak inhibitor of dopamine reuptake. It is indicated in depressive illness and generalized anxiety disorder (GAD). Venlaf is presented in the form of 75mg tablet. Price: MRP Tk. 10.00/tab.

Bromazep

Bromazepam 3mg

The most affordable Bromazepam brand in Bangladesh

Bromazep (Bromazepam) is an anxiolytic drug of Benzodiazepine group having smooth and superior efficacy. It is indicated for the short term use in anxiety and anxiety associated physiological problems. Bromazep is presented in the form of 3mg tablet. Price: MRP Tk 2.00/tab.

Orlev

Levofloxacin 250&500mg

The most affordable Levofloxacin in Bangladesh

Orlev (Levofloxacin) is a synthetic 3rd generation quinolone. It is indicated for the treatment of respiratory tract infections, skin and soft tissue infections, urinary tract infections. Orlev is presented in the form of 250mg and 500mg tablets. Price: MRP Orlev 250-Tk 8.00/tab, Orlev 500-15.00/tab.

Conaz

Fluconazole INN 50&150mg

The most economic fluconazole brand in Bangladesh

Conaz (Fluconazole), a synthetic triazole antifungal agent is active against fungi, including yeasts and dermatophytes. It is indicated in the treatment of vaginal candidiasis and candidal balanitis, mucosal candidiasis, tinea pedis, tinea corporis, tinea cruris, pityriasis versicolor, dermal candidiasis, candidaemia and disseminated candidiasis. Conaz is presented in the form of 50mg and 150mg capsules. Price: Conaz 50 -Tk5.00 /cap. Conaz 150 -Tk 12 /cap.

Burn cases: A medical and social problem in Bangladesh

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Abstract

Burn is one of the most common devastating events all over the world. In the developed countries they have the adequate control and preventive measures but in our country we do not have any preventive measures even at house, offices, factories where it happens frequently. Not only that, till now, we do not have any specialized hospital for the proper management of burn patients. Resulting huge number of patients die every day. Due to initial mismanagement for the burn patients causing life threatening complication like burn contracture leading physically disabled and ultimately they become the burden for the family and for the society as well. So, country urgently needs a specialized burn hospital and upgrading the existing facilities for the burn patients in our hospitals.

Introduction

Bangladesh, a developing country with a population of 120 million people. Per capita income is \$386. High infant mortality rate (IMR), low adult literacy rate, high unemployment and high gender inequality all prove that the poverty in Bangladesh is widespread. Studies indicate that about 45% of the population live under acute poverty while 28% people in the urban and 25% in the rural areas live under poverty line 2, having less than 1805 kcal per day per person.¹

Deprivation of basic human needs: food, clothing, shelter, medical care and education are probably the universal definition of poverty. Natural catastrophic climatic disaster is a common phenomenon. A considerable number of diseases such as dengue fever, malaria, infant diarrhea and upper respiratory tract infection of under five ages are some of the almost unique problems of our health sector.

In the new millenium, though we have gained some momentum in different sectors but in the health sector and health care delivery system till remains below our expectations. Our government hospitals are not able to fulfill all the requirements for the patients for all levels. Our doctors patients ratio, doctors nurses ratio, patients bed ratio are quite unsatisfactory. The number of patients is increasing day by day but the hospital supplies not increasing in the same parallel way. So, naturally, our hospitals are not able to cope with that increase demand. Recently, this has been aggravated by a new and added problem of violence by chemical burns so called acid burns.

Burn Incidents in Bangladesh

Throughout the country, an estimated 1% of the population suffers from different types of burns each year. The common causes of burns in Bangladesh are as follows:

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Department of plastic surgery and burn unit, DMCH.

A. Flame burn, 75% of incidences occur due to flame injury.

1. Accidental, this occur mainly in the home during household working like cooking, specially gas leakage, burst stoves, setting clothes alight, particularly women and children wearing "Shari".
2. Trapped in the burning house.
3. Using fire pots in the winter, especially old and children.
4. Warming the lower part of the body after delivery specially women in remote village area.
5. Homicidal and suicidal, pouring kerosene oil, diesels, gasoline or other inflammable liquids onto a human body and setting alight.

B. Acid burn (chemical burn)

1. These are almost all homicidal cases except a very few reported cases of accident. Nitric acid, sulfuric acid and hydrochloric acid are the most common examples. This constitutes 20% of total burn cases.

C. Others:

5% burns occurs due to electric burn. The cause of electric burn is mainly accidental. The majority of such cases occur due to electric short circuits in garments factories or other small factories, congested markets and slum areas.

Acid Burn (Chemical Burn)

The incidence of chemical burn, so called acid burn a recent, dreadful man made crisis has been arising and gradually occupying in alarming position. In the beginning, it was women who were the targets of these sorts of violence, however, these attacks have spread beyond the gender limit and now a days, a considerable number of men as well as children are reported as victims.

There are no real statistics to state how many victims becoming physically disabled and becoming the burden of the society each year.

Management for burn cases

The following measures should be considered immediately.

- (a) Patient should be removed from the source of incidence.
- (b) Patient should be completely undressed for easy ventilation, pouring of copious water whatever may be the cause and all body surfaces should be examined.
- (c) The first priority must be maintenance of a patent airway, effective ventilation, and support of the systemic circulation.
When the patients suffer inhalation injury of upper respiratory tract, endotracheal intubation should be performed within 6-8 hours after injury, because laryngeal or tracheal edema may not occur within this period.
- (d) Examine the extend of the burn (TBSA). We usually follow the Lund and Browder chart which allows for difference in various age groups. The chart is depicted in figure -1.
- (e) If the extension of burn involves more than 20 % total body surface area (TBSA) fluid resuscitation should be

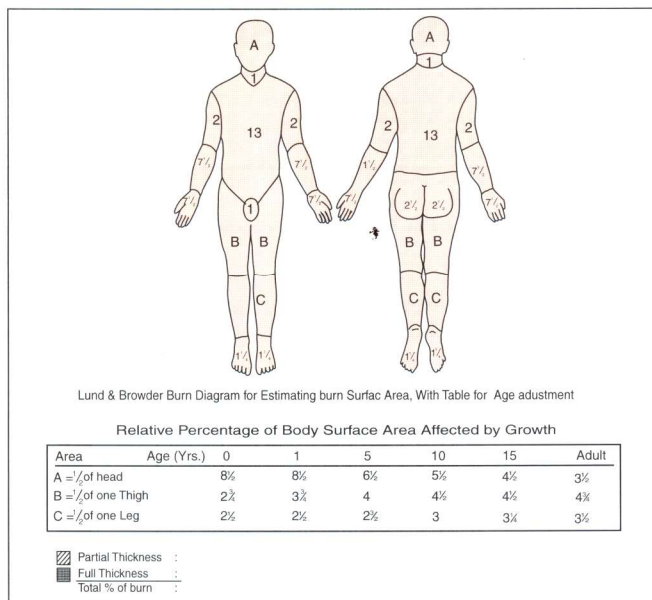


Figure-1: Estimation of total burn surface area (TBSA) (Browder chart)

started because the systemic inflammatory response starts resulting capillary leakage² The fluid should be adjusted using modified Parkland formula³ (shown in Tab-1.)

Table-1

(f) As pain increases the heart rate, blood pressure and metabolic

Day 1	Day 2	Day 3
(0 hours) = time burn occurred (hours 0-24) Lactated Ringer's solution Total volume for 24 hours = 4 cc/kg/ % burn. Give 1/2 of total volume in 1st 8 hours and give 1/2 of total volume in 2nd 16 hours. Adjust infusion rate as necessary to keep urine output: Adult: 30-50 cc/hour Children: 1.0 cc/kg/hour	Hours 25-48 Change lactated Ringer's solution to D5W and adjust based on urine output as Shown in Day 1. Begin colloid infusion: 5 % Albumin at 0.3-1.0 cc/kg/ % burn/16 = cc % Albumin/hour. Do not vary based on urine output.	Hours 49 + Change to maintenance i.v. or as begin po intake and/or enteral feedings.

rate, pain should be control. It also decreases posttraumatic stress of the patients.

- (g) Proper antibiotic should be started as soon as possible to prevent secondary infection.
- (h) Dressing to be done at regular intervals.

Surgical management

- (a) Early excision followed by split thickness skin graft (STSG) is very important to decreases the morbidity and mortality.
- (b) Release the contracture followed by split-thickness skin graft (STSG) and full thickness skin graft (FTSG) in case of post burn contracture. (Fig - 2, 3, 4 & 5)
- (c) Physiotherapy is another important event postoperatively.
- (d) Recently, "Scar therapy gel"⁴, "silicone gel sheet"⁵, pressure garments or in combination of pressure garments and silicone gel sheet is very effective measure for prevention of hypertrophic scar or keloid formation.

Burn management facilities in Dhaka medical college hospital

Dhaka medical college hospital (DMCH) is the only government-run hospital where all burn patients come from

all corners of Bangladesh. But it has only 8 beds for the burn patients. Besides this, there is no special allocation for the acid burn patients treated in DMCH. Hopefully, last year



Figure- 2: (Pre-operative) Severe post burn contracture affecting face, neck and upper chest wall. Chin completely attached to upper chest wall.



Figure-3 : (Same patient, postoperative)

(July 2001), an operation theatre with all equipments is started its functioning in full suing. Actually, it was a useless "Veranda" of ward no 35/B, DMCH. Here operations are going on almost everyday. Previously, there was no fixed burn OT (Operation Theatre) for the burn patients. The doctors of burn unit get the OT (Operation Theatre) facilities once a week.

Future steps

Full fledged 50 bedded special unit for management of all burn patients as well as special facilities for treatment and rehabilitation centre for the burn victims and survivors are going to inaugurate last of this year. With sophisticated equipments, four units of ultra-modern operation theatre, modern post-operative room, full fledged rehabilitation



Fig- 4: Post burn contracture affecting face, nose and all fingers.



Fig- 5: Photograph showing early excision followed by STSG.

centre and education and training centre include with this special unit. After establishing this 50 bedded unit, it could be possible to provide all sophisticated modern treatment especially for the acid victims. Recently, the present government realizes the acute need for burn hospital for the better management of burn patients, the proposed 50 bedded burn hospital is going to be upgraded to 100 bedded.

Effective measures:

To decrease the incidence of burn accident, there should be increase awareness in community and society through proper propaganda using mass media like radio, television, poster, leaf let, community based meeting, symposium etc. School teachers, Imam of the mosque, leader of the village may play an effective role. Establishment of proper physiotherapy and rehabilitatory system for the victims should be ensured.

Conclusion

There should be the provision of training and sensitization of personnel dealing with burn patients. Expert and special trained doctors as well as paramedics should be given priority for working at very specialized burn hospital. More care should be given for handling of burn cases.

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Electro convulsive therapy : A review

Alam M S ¹, Kamal M Z ²

The Orion 2003; 14 : 61-62

Introduction

Electro convulsive therapy (ECT) is a procedure in which generalized seizures lasting 25-150 seconds, induced by the passage of an electrical current through the brain under general anesthesia and muscle relaxant are used for therapeutic purpose.

Phillipus paraceusus used seizures produced by camphor to treat psychosis and mania in the 16th century and Leopold Von Auenbrugger, W.Oliver and Carl Weickhardt in the late 19th century. The first modern application of convulsive therapy occurred in January 1934 by Ladislav J Von Meduna, using Camphor. Psychiatrist A.E Bennett first introduced curare, a muscle relaxant to the procedure to make it safer. The use of electricity to induce seizure was introduced in April 1938 by Ugo Cerletti and Lucio Bini and was imported to United States by Lothar Kalinowsky and others in 1939 ¹. Since its invention ECT has been criticized by different people. Thomas Szasz wrote that electricity as a form of treatment is "based on force and fraud and justified by medical necessity" . "The cost of this fictionalization runs high," he continued . "It requires the sacrifice of the patient as a person , of the psychiatrist as a clinical thinker and moral agent" ². On the other hand many psychiatrist advocate ECT as a form of treatment writing "there is evidence that treatment with ECT can be beneficial in patients whom antidepressant medication has been unsuccessful" ³.

Indication

Convulsive therapy was introduced in the late 1930s on basis of mistaken idea that epilepsy and schizophrenia do not occur together. However ,when the treatment was tried it became apparent that the most striking changes occurred not in schizophrenia but in severe depressive disorder ⁴. Trial by clinical psychiatry committee, 1965 showed that it acted faster than imipramine or phenelzine and was more effective than imipramine in women and more effective than phenelzine in both sexes ⁵.

ECT should be used mainly when it is essential to bring about improvement quickly. Therefore, the strong indications are immediate high risk of suicide, depressive stupor or danger of physical health due to food and drink refusal.

ECT is particularly effective for patients with depressive psychosis or definite psychomotor disturbance .

ECT can be beneficial in depressed patients for whom antidepressant medication has been unsuccessful ⁶.

ECT is also effective in treatment of affective psychosis that follows childbirth.

ECT is effective in treatment of Mania ⁷ but reserved mainly

for drug resistant cases.

ECT is useful in treatment of acute catatonic states and schizoaffective disorders and in patients with acute schizophrenia with predominately positive symptoms ⁸. ECT should be reserved to use only when highest dose of medication has been used for adequate duration but no marked improvement is achieved.

Procedure

Patient is first selected for ECT. Patient's fitness for general anesthesia is assessed . Informed consent is taken from patient's legal guardian to give ECT under general anesthesia.

On the day of ECT patient is kept nothing by mouth at least for 5 hours .Patient is anesthetized accordingly. The skin is cleaned in appropriate areas and moistened electrodes are applied. After muscle relaxation is achieved the treatment is given.

Mode of action

"Psychiatrist of that era (late 19s) used this form of shock therapy believed that the fear and terror produced were therapeutic because the " feeling of horror" before the onset of convulsion following injection of camphor, pentetrazol, triazol, picrotoxin, or ammonium chloride render the patients different after the experience ⁹. But the day has changed. No evidence exists for the hypothesis that ECT is effective because it is perceived as a punishment or that it enhances repression by causing confusion. As it is performed today , the procedure is not painful or threatening ,and confusion and forgetting is not necessary for a therapeutic response. However, confusion may be a mark of an effect, such as sufficient stimulus dosage, but is relevant to the action of ECT in some psychotic disorders ¹⁰. With the advancement of science changes in the brain produced by ECT has been established. Some of the biological actions of ECT are similar to those of antidepressant medications both causes down regulation of β -receptors. But in doing this action antidepressants needs intact serotonin system which ECT does not need. So, ECT and antidepressants have important clinical and physiological differences that make it difficult to infer a common mechanism of action in depression.

ECT is also effective in treatment of mania, schizophrenia and in delirium. Mechanism of actions of ECT in these conditions are still to be established.

ECT causes some physiological changes in the brain- Cerebral blood flow increases up to 200%. There is an increased output of prolactin and neurophysin during and soon after the seizures. Blood flow and glucose metabolism ,mostly in frontal lobe decreased. The degree of cerebral metabolism is correlated with therapeutic response.

Which procedure is most effective?

One of the central questions about the mode of action of ECT is whether the therapeutic effect depends on the seizure. Clinicians have generally been convinced that the patient does not improve unless a convulsion is produced

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during ECT procedure. This impression has been confirmed by several doubleblind trials which, taken together shows that ECT is strikingly more effective a full placebo procedure that includes anesthetic and muscle relaxant^{11,12}

Modern ECT machines deliver brief pulses electrical energy, with this mode of administration; both electrode placement and electrical dosage can have profound effect on therapeutic efficacy of ECT. A recent study by Sackheim et al (1993) examined the effect of four ECT treatment regimes- low and high electrical doses with right unilateral and bilateral electrode placement in severely depressed patients. The result showed that low dose right unilateral treatment was significantly less effective than high dose right unilateral treatment. Both the bilateral electrode placements were more therapeutically effective than the unilateral placement and bilateral high dose treatment was marginally more effective than low dose bilateral treatment in speed of effect¹³. From the theoretical view point it can be concluded that an important determinant of ECT efficacy is how far the applied electrical energy exceeds the seizure threshold of individual patient.

Unwanted effects

Anxiety, headache, brief amnesia, disorientation, confusion, nausea, vertigo muscle pain in jaw may occur after ECT specially if old type machine is used. Occasional damage to teeth, tongue, lips, small electrical burn at place of electrodes can occur due to technical fault. Crouching fracture of vertebra, muscle torn may occur if adequate dose of muscle relaxant is not used.

Some rare complications like arrhythmia, pulmonary embolism, aspiration pneumonia and cerebrovascular accident may occur in patients suffering from physical illness.

Structural imaging studies in patients have shown that no damage to brain occurs by ECT¹⁴

The most discussed side effect of ECT is memory disorder after ECT. After reviewing several studies- sackheim '93, Cronholm '64, Johnstone '1980, Weeks '80, Freeman '80^{15,16,17,18} it seems reasonable to consider that, when used in usual way, ECT is not followed by persisting memory disorder, except perhaps in small minority and that event in this group it is still uncertain whether the impairment is due to the effect of ECT is to a continuation of the original depressive disorder.

Death rate attributable to ECT is 3-4 to 4-5 per 100,000^{19,20} The risks are related to the anesthetic procedure and are greatest in-patient with cardiovascular disease and death is usually due to ventricular fibrillation or myocardial infarction.

Contraindications

Any medical illness like respiratory infection, serious heart disease and serious pyrexial illness that increase the risk of anesthetic procedure is contraindication to ECT. Disease- Like serious heart disease, recent coronary thrombosis, cerebral so aortic aneurysm and raised intracranial pressure that are likely to be worsen by change in blood pressure and cardiac rhythm is contraindication to ECT.

ECT may cause increased cognitive impairment in patients taking lithium and prolonged seizure in patients taking SSRI. Pregnancy is not a contraindication for ECT

Conclusion

ECT is the most debatable issue in psychiatry throughout the world. In many countries ECT use is not practiced on the hand of protest by the humanitarians. Despite these issues ECT is still one of the emergency treatment method surviving even in America where 50000 patients get ECT every year. In our clinical practice we also see ECT as one of the life saving , emergency and safe method of treatment in our field . Suicidal ,dangerously violent and aggressive patient with drug refusal and catatonic and depressive stupors as well as puerperal psychotics are the most beneficial patients improved by ECT. If patients are chosen academically ,anesthetic and other procedures are maintained properly ,ECT is a safe and smart form of treatment . Most propaganda against ECT are due to unethical practice of ECT by psychiatrists.

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A case report : Stevens Johnson syndrome

The Orion 2003; 14 : 63,39

Mollah A H¹

Introduction

Stevens johnson syndrome or erythema multiforme major is an acute, self limiting inflammatory condition of skin and mucous membrane. Here we report a case of a boy suffered from stevens johnson syndrome.

Case report

A 8 years old boy was admitted in pediatric ward, Dhaka Medical College Hospital (DMCH) with skin rashes and eruptions all over the body along with high grade continuous fever. This fever was started 3-4 days back and for this he was being treated with paracetamol and cotrimoxazole. After about 12 hours of starting the drugs, he developed this rash, which first appeared on the face and lips and then gradually spreaded all over the body. Along with this he also developed difficulties in swallowing and foreign body sensation in both eyes simultaneously. However, he had neither difficulties in micturition nor in defecation. Contour were normal. On further enquiry, mother also told that her child has been taking tegretol (carbamazepine) for last 14 days as prescribed for associated epilepsy.

On examination, the child was found febrile, temperature was 102° F, pulse 88/min, blood pressure 100/70 mm of Hg, maculo papular rashes were found all over the body specially over the extremities and trunk. Few lesions were characteristically pale centred with red surrounding("Target" lesions). Over the next 3 days the erythematous lesions became vesicular and bullous and he developed ulcerations over the muco cutaneous junction of the lips and in the buccal mucosa with pseudomembrane formation. There was conjunctival congestion in both eyes. Anogenital mucosa was found healthy and urine color was normal.



Fig - : erythema multiformes

Peripheral blood count shows total count of WBC- 17,000/ cu mm, neutrophil- 78%, lymphocyte- 20% , ESR- 40 mm in 1st hour. Routine and microscopic examination of urine shows no abnormality, X-ray chest and ultrasonography of the whole abdomen reveals normal findings

At first the two suspected drugs (cotrimoxazole and carbamazepine) were withdrawn immediately. Then he was given supportive and symptomatic treatment with intravenous fluids, erythromycin, analgesics, prednisolone, glycerin swabs on lip, chloramphenicol eye drops and ointment.

After about 48 hours, the child became stable, however, his treatment and other supportive care were continued for 10 days. Subsequently sodium valproate was started to prevent further epileptic attacks and also to see any untoward effects. Having no side effects of the drug and finding him clinically stable, the child was discharged after 15 days of hospitalization with advice to follow up and a cautionary advice regarding not to take cotrimoxazole and carbamazepine in future.

Discussion

Erythema multiforme is of two types minor and major, with erythema multiforme minor meaning skin lesions only, and erythema multiforme major being synonymous with stevens johnson syndrome.

Erythema multiforme minor as the name suggests is the less severe of the two types and accounts for 80% of erythema multiforme. The rash appears over a few days. There may be minor burning or itch. It is more intense over the backs of the hands and feet. The rash lasts for 1 to 2 weeks and then recedes leaving residual brown pigmentation.⁴

The hallmark of erythema multiforme major or stevens johnson syndrome is the development of large blisters in the mouth, on the skin, around the anus or genitals, in the throat or even on the eyes³. In addition affected persons may develop reddish skin rashes in various shapes, sizes, and locations in addition to joint pains, fever and itching.

The majority of cases of stevens johnson syndrome are between ages 20 and 40, and 20% of cases occur in children and adolescents. It is rare both under the age of 3 and over the age of 50. Males are slightly more affected than females and there is no racial predilection. The mortality of this syndrome is reported as 3 to 19%, although this number has probably come down with modern treatments⁴.

The most recognizable cause of stevens johnson syndrome is medications. If a person is prescribed a drug and develops a skin rash within two weeks, the cause is presumed to be the medication³. Antibiotics are reported to cause at least 30% to 40% of cases, with sulfonamides, tetracyclines, amoxycillin, ampicillin and penicillin most commonly implicated⁴. This syndrome occurs in less than 1 out of every 2000 people who take a form of penicillin, the most likely drug to cause this reaction³. NSAIDs (butazones, ibuprofen, piroxicam and salicylates) and anticonvulsants (phenytoin, carbamazepine and phenobarbital) are also reported. Other possible etiologies include viral upper respiratory infections, mycoplasma pneumonia, pharyngitis, Herpes simplex infection, SLE, histoplasmosis, pregnancy, malignancy and external beam radiation. Some cases remain idiopathic. In our patient, the suspected drug is cotrimoxazole and carbamazepine is put in the 2nd position of the list as the patient had got it for two weeks.

The pathogenesis is unclear, but it may be a host specific cellmediated immune response to an antigenic stimulus, resulting in damage to keratinocytes cytokines released by

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The rest of the case report is given on page39

The Orion 2003; 14 : 64

Medi news

A Short Fuse

CELL PHONES COULD RAISE YOUR BLOOD PRESSURE

Cell Phones are more than just intrusive and irritating. Researchers now say that using cellular phones may actually cause a temporary increase in blood pressure, according to a recent study published in the Lancet. In the study, German researchers positioned a 900-megahertz cellular phone to the right side of the heads of 10 healthy volunteers, then turned it on and off for fixed periods of via remote control. (The volunteers did not know when the phone was operating and they did not actually talk on the phone.) The researchers found that 35 minutes of exposure to the electromagnetic fields generated by the phones increased resting blood pressure between 5 and 10 mm Hg, an increase that could be dangerous for someone with already high blood pressure. Researchers suspect that the elevation in blood pressure are caused by a temporary constriction of blood vessels in the side of the head nearest the phone.

Source : Health & Nutrition, Oct. 2002

Wave Goodbye to GERD

A new outpatient treatment may put an end to chronic severe heartburn, also known as gastroesophageal reflux disease (GERD). "The Strata procedure uses an intense pulse of radio waves to tighten muscle control at the pin where the esophagus or food pipe, meets the stomach, preventing acid from traveling upward, says Timothy Nostrant, MD, a researcher at the University of Michigan Medical School in Ann Arbor. In Dr. Nostrant's ongoing studies, up to 80% of Stretta patients were free of heartburn after 2 year, 2 year, and more than 60% didn't need heartburn drugs anymore. After 2 years, 60% were still GERD free. The procedure is recommended only for GERD and not for occasional heartburn, large hiatal hernias, or inflammation of the esophagus

Source : Health & Nutrition, Oct. 2002

Fake Blood

NOT JUST A SPECIAL EFFECT

A new addition to the list of medical marvels could be appearing at an operating table near you. So-called blood substitutes-manufactured from synthetic products or from human red blood cells and cow's blood hold several advantages over the real things: They can be used in people of any blood type, can be stored longer than donor blood, and are not likely to transmit diseases. These products could have several important roles in medicine including stabilizing trauma patients before they get to the hospital, says Peter L. Page, M.D. senior medical officer for the American Red cross Biomedical Services, and for operations that require a lot of blood, the subs will help ease the strain on the donor supply. But the imitation cant replace the real deal in every case. Donor blood can sustain the body for weeks, while the body uses up the substitutes in day. the products are not good for people with anemia or certain cancers because the frequency of transfusions would make them impractical, Page says. Also, they don't supply plasma or platelets, which are essential for patients undergoing heart surgery or chemotherapy for some cancers, and to prevent bleeding. The blood substitutes could be available in the US by the end of the year, pending government approval.

Source : Health & Nutrition, Oct. 2002

back savers for

new moms

With a weighty bulge challenging their centres of gravity, it's no wonder that half of pregnant women battle back pain. Although most of the aches go away within six weeks of childbirth, about 15% of new moms still experience some lingering pain. Protect your back with these strain - saving strategies :

Tone your Mucles. During your pregnancy, keep exercising for as

long as your doctor allows. After giving birth, start doing abdominal crunches and back extensions as soon as possible. (For most women having vaginal births, this means one week, for C-sections, six weeks, but cheek with your doctor to be sure)

Keep moving

Regular aerobic activity and stretching (as simple as bending over and reaching for your toes) will loosen and warm up muscles, making them less vulnerable to getting twisted and pulled out of whack.

Lift correctly. Holding weight at arm's length will strain mustang over obstacles, and use your leg muscles. For egg, squat rather than bend to pick baby up from the floor. (Even nonmoms can benefit from lifting the right way.)

Carry with care. If you are planning to carry baby over long intervals, don't prop her on your hip, this overloads the back muscles. To even out the weight, weight, try a backpack or a Snuggli.

When to see a doctor

Just like extra pounds, back pain should eventually be part of a new mom's past. If you're using these strategies and pain persists longer than six weeks or gets worse, see a doctor. Also, if the pain radiates from your back down into your legs, it could be a sign of something more serious, such as a disk herniation, which will need a doctor's attention

Source : Health & Nutrition, Oct. 2002

Zinc therapy with ORS can reduce child morbidity

In the latest development on diarrhoeal diseases, researchers led by a Bangladeshi scientist have innovated that zinc with oral dehydration solutions (ORS) can reduce child morbidity and mortality in large numbers.

The zinc therapy was found very effective while the scientists conducted a study on 8,070 Bangladeshi Children under the auspices of International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B).

During the study, the scientists documented substantially lower rates of child morbidity, hospitalization and noninjury deaths in children treated with the zinc therapy

Zinc deficiency is highly prevalent in children in developing countries. Inadequacy of dietary zinc intake is exacerbated by the net loss of zinc during diarrhoea" said Abdullah Baqui, the lead researcher of the study in an article Published in November 9 Issue of British Medical Journal.

The survey revealed that the incidence of diarrhoea related hospitalization were significantly less and non-Injury Deaths were 50 percent less in children residing in the areas randomized to receive zinc than in children in the comparison clusters.

Zinc Supplements given during diarrhoea reduce the duration and severity of treated episodes and if given for 14 days during and after diarrhoea, It can reduce the incidence of diarrhoea and acute lower respiratory infection in the subsequent two to three month Baqui said.

The study , conducted with funding from the USAID, was based on the premises that the dietary intake of zinc of most Bangladeshi children is marginal that many children become deficient during episodes of diarrhoea and that treatment of diarrhoea with zinc will help maintain an adequate zinc balance and tissue function.

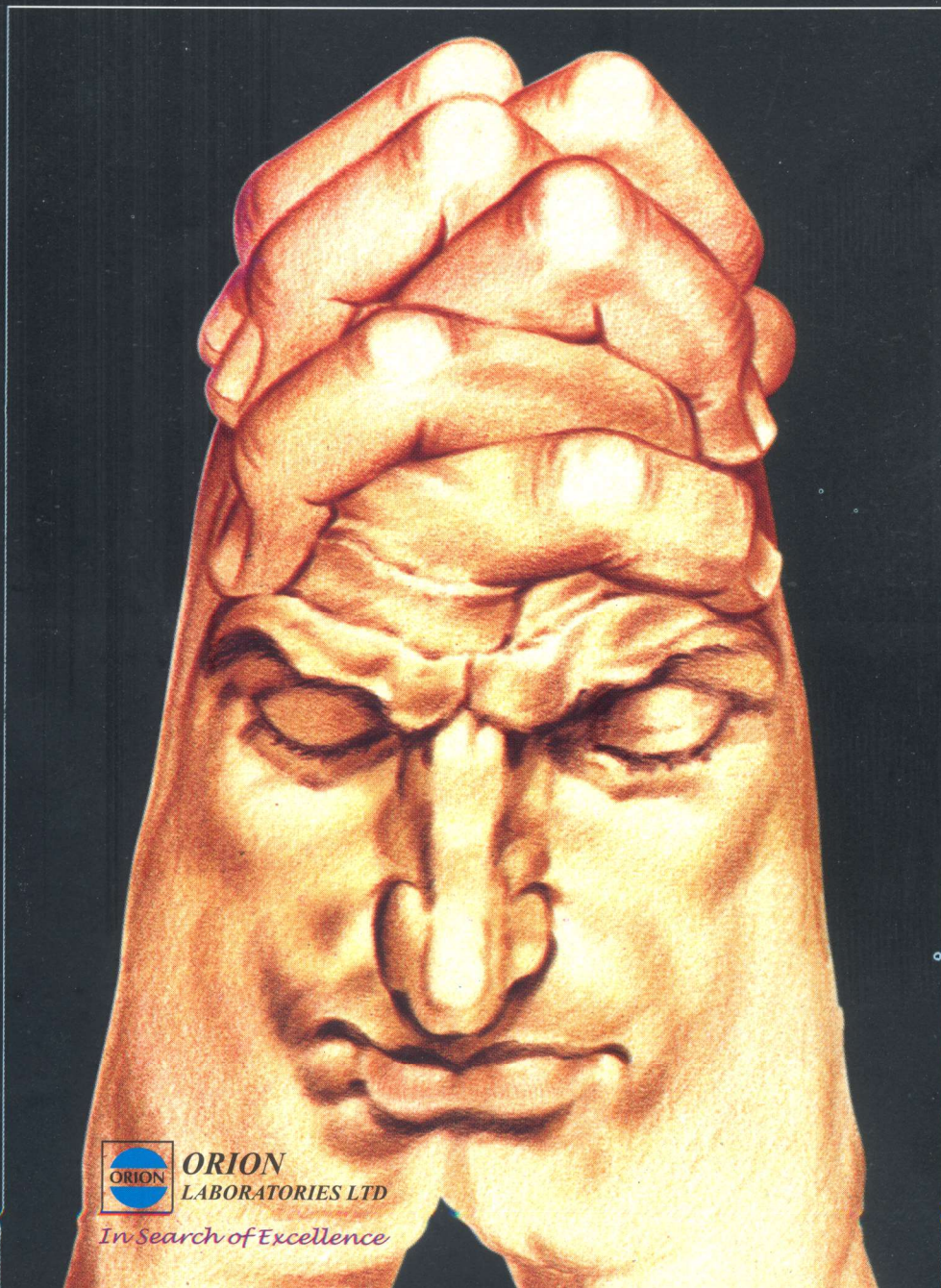
Baqui, an Associate Professor of Internatnal Health, John Hopkins Blomberg School of Public Health, said "The lower rates of child morbidity and mortality with zinc therapy represent substantial benefits from the simple and inexpensive intervention that can be incorporated within existing diarrhoeal disease control efforts and which should significantly improve child health and survival."

Source : The Bangladesh Observer, 14th Nov.-2002

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