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EDITORIAL

World Diabetes Day is observed every year on November 14th (the birthday of Frederick Banting who, along with Charles Best discovered insulin). The day focuses on the concern over the escalating incidence of diabetes around the world. Last year the spotlight was on prevention of renal complications. This year the theme is 'fight obesity prevent diabetes'

About 1.7 billion of the world's population is at an increased risk of weight-related non-communicable diseases such as diabetes and heart disease. Obesity is becoming increasingly common in children and adolescents, resulting in more and more children being diagnosed with type II diabetes, until recently a disease mostly associated with adults / elderly. Overweight and obesity are modifiable risk factors for type II diabetes. Lifestyle changes such as eating a healthy diet and increased physical activity are methods to delay /prevent the onset of type II diabetes and to reduce the risk of developing complications in diabetics. It is estimated that at least half of all cases of type II diabetes could be prevented if weight gain in adults could be avoided. Let us be well informed, screen and diagnose diabetes and obesity early, provide comprehensive treatment and spend some time for patient and community education.

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Tips in Nephrology

Renal dysfunction in Diabetics

Stages

I. Microalbuminuria- may be reversible if treated aggressively
II. Macroalbuminuria
III. Decrease in creatinine clearance
IV. End stage renal disease

Symptoms of renal dysfunction in diabetics

- Hypertension
- Oedema
- Anorexia
- Nocturia in spite of controlled blood sugar (Normally, during night there is an increase in ADH secretion leading to decreased urine frequency. In renal dysfunction, there is a reduction in ADH secretion leading to a larger volume of urine)
- Increased episodes of hypoglycemia in spite of well controlled blood sugar. This is due to decreased clearance of insulin and a possible decrease in the clearance of OHA

Chronic Renal failure (CRF)

Management of a patient with CRF who is unable to afford dialysis

- Restriction of proteins
- Salt restriction
- Control DM
- Control HT

Avoid the following drugs:

- All NSAID's including Cox II inhibitors locally & systemically
- Aminoglycosides
- Metformin (lactic acidosis)
- Probenecid
- X-ray contrast dyes. Non ionic dyes are less nephrotoxic than ionic dyes. If they have to be given, use with n-acetylcysteine (mucomix- free radical scavenger)

Dosage adjustment of the following drugs is required in patients with CRF

- Tetracycline
- Penicillins, cephalosporins, quinolones
- Sulphonamides
- Anti retroviral drugs

Safer drugs

- Dextropropoxyphene,
- Tramazol
- Paracetamol.

- Pentazocin
- Macrolides

CRF patient on dialysis

- Since fever is a hypercatabolic stage, dialysis is a must during febrile stage
- As blood pressure falls during dialysis, morning dose of anti hypertensive medicine should be avoided
- In diabetic patients, only insulin should be administered, OHAs are avoided as dialysis washes out the OHAs

Vaccination

- Hepatitis B vaccination- Increased dose is given in order to increase antigenicity
- 2ml is given instead of 1ml at 0, 1, 2 and 6 moths

Role of erythropoietin

- Hb is targeted between 10-12 g%
- Basic aminoacids, iron and vitamin B complex should be adequate before erythropoietin initiates its action

Other drugs in CRF

- Calcium supplements along with 1:25 cholecalciferol
- Phosphate binder
- Sodamint tablets to correct acidosis by ensuring normal level of sodium bicarbonate (12 tablet = 45-50mg = normal daily requirement), the increase in sodium content can be controlled by increasing the dose of diuretics

*(Based on a talk by **Dr.Bhavesh Vora**, Consultant Nephrologist, Asian Heart Institute, Shushrusha, Bhatia and Sir. HN. Hospitals, on 19th. September 2004 at the AHIRC auditorium)*

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Abdominal pain in children -II

Differential diagnosis of abdominal pain in children:

Intusucception

Child under 2 years presents with excessive crying, bilious vomiting, and passes currant jelly stools. If a chubby child suddenly starts crying and has been recently weaned or suffered from a bout of acute gastroenteritis, with no findings on clinical examination, suspect intusucception. USG is diagnostic; Plain X-ray abdomen (vertical film) shows multiple fluid levels. Barium enema in a child could be done for diagnostic as well as therapeutic purposes.

In an older child intusucception may present as intermittent abdominal pain with disappearing lump. A CT with contrast will aid the diagnosis and differentiate from Meckel's diverticulum, polyp or lymphoma

Acute appendicitis Child has tachycardia; WBC is 16000-2000/cumm. Child may need surgery to prevent perforation, gangrene.

Mesenteric lymphadenitis is an entity of childhood. Presentation is a sub acute or acute onset with pain in the right/left iliac fossa, with occasional vomiting. One of the causes of mesenteric lymphadenitis is Yersinia infection (pseudo tubercular) and the treatment is with doxycycline

Torsion of testis- Child presents with excessive crying, X-ray abdomen is normal, local examination shows tomato red appearance of the scrotum. Differential diagnosis is from epididymo-orchitis

Lead poisoning-Child presents with abdominal pain, constipation, anaemia, and blue line on the gums, basophilic stippling in peripheral smear and increased lead levels in the blood. Source of lead includes utensils, pencils, paints, pipes, toys, and 'sindoor', 'surma', and ayurvedic bhasmas.

Porphyria - Child with porphyria usually develops abdominal pain after ingestion of drugs

Metabolic disorders- Child sometimes presents with history of multiple surgeries.

- In alkaptonuria, urine turns black on standing
- In diabetic ketoacidosis, child has tachypnoea, child is sick looking, breathless, occasionally child presents with abdominal catastrophe, urine examination shows sugar +++ and blood sugar is more than 600 mg %
- Familial hypertriglyceridemia, sallow skin, raised triglyceride levels , raised amylase levels due to associated pancreatitis

Abdominal migraine/epilepsy - Child presents with intermittent abdominal pain with crying. EEG is diagnostic and there is therapeutic response to carbamezepine

Management

- Specific management depending on the cause
- Drug treatment
  - Antispasmodics Propanthalene (probanthene), oxyphenium (antrenyl), hyoscine (buscopan), pipenzolate (piptal)
  - Newer antispasmodics- dicyclomine , dicyclomine with diclofenac (cataspa), dicyclomine with paracetamol and dextropropoxyphene (spasmoproxyvon)
  - Antacids
  - Antiflatulents- carminatives
  - H_2RB-Ranitidine 2-4 mg/kg/day, when given parenterally, use half the oral dose
  - PPI- Omeprazole, lansoprazole, pantoprazole, chelators- sucralfate,
  - HPylori kits- Omeprazole 10 mg , metronidazole/tinidazole, clarithromycin/ azithromycin/amoxicillin for 7-10 days

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(Based on a lecture by Dr. Rashid Merchant, Consultant Paediatrician, Asian Heart Institute & Research Centre at the AHIRC auditorium)

Clinical Profile:

Narcolepsy

- Narcolepsy is a disabling neurological disorder of sleep regulation that affects the control of sleep and wakefulness.
- It may be described as an intrusion of the dreaming state of sleep (REM or rapid eye movement sleep) into the waking state

Symptoms

- Symptoms generally begin between the ages of 15 and 30
- The four classic symptoms of the disorder are :
  - ❖ Excessive daytime sleepiness: Unrelenting excessive sleepiness is usually the first and most prominent symptom of narcolepsy. Patients with the disorder experience irresistible sleep attacks, throughout the day, which can last for 30 seconds to more than 30 minutes, regardless of the amount or quality of prior nighttime sleep. These attacks result in episodes of sleep at work and social events, while eating, talking and driving, and in other similarly inappropriate occasions
  - ❖ Cataplexy (sudden, brief episodes of muscle weakness or paralysis brought on by strong emotions such as laughter, anger, surprise or anticipation)
  - ❖ Sleep paralysis (paralysis upon falling asleep or waking up)
  - ❖ Hypnagogic hallucinations (vivid dream-like images that occur at sleep onset)
- Disturbed nighttime sleep, including tossing and turning in bed, leg jerks, nightmares, and frequent awakenings, may also occur
- The development, number and severity of symptoms vary widely among individuals with the disorder
- It is probable that there is an important genetic component to the disorder as well

Treatment

- There is no cure for narcolepsy; however, the symptoms can be controlled with behavioral and medical therapy
- The excessive daytime sleepiness may be treated with stimulant drugs or with the drug modafinil (Provigil), which is approved by the FDA
- Cataplexy and other REM-sleep symptoms may be treated with antidepressant medications
- At best, medications will reduce the symptoms, but will not alleviate them entirely
- Basic lifestyle adjustments such as regulating sleep schedules, scheduled daytime naps and avoiding "over-stimulating" situations may also help to reduce the intrusion of symptoms into daytime activities

Prognosis

- Although narcolepsy is a life-long condition, most individuals with the disorder enjoy a near-normal lifestyle with adequate medication and support from teachers, employers, and families
- If not properly diagnosed and treated, narcolepsy may have a devastating impact on the life of the affected individual, causing social, educational, psychological, and financial difficulties

Edited version of article at...*http://www.ninds.nih.gov/health_and_medical/disorders/narcolep_doc.htm*

Know the drug

Nitazoxanide

Nitazoxanide is an antiprotozoal agent which contains the active ingredient, nitazoxanide (2-acetyloxy-N- (5-nitro-2-thiazolyl) benzamide), a synthetic antiprotozoal agent for oral administration.

Indications: It is indicated for the treatment of diarrhea caused by *cryptosporidium parvum* and *giardia lamblia* parasites. It has also been used in the treatment of amoebiasis and worm infestation.

Mechanism of Action

Following oral administration in humans, nitazoxanide is rapidly hydrolyzed to an active metabolite, tizoxanide (desacetyl-nitazoxanide). Tizoxanide then undergoes conjugation, primarily by glucuronidation. The anti protozoal activity of nitazoxanide is believed to be due to interference with the pyruvate: ferredoxin oxidoreductase (PFOR) enzyme-dependent electron transfer reaction, which is essential to anaerobic energy metabolism. Studies have shown that the PFOR enzyme from Giardia lamblia directly reduces nitazoxanide by transfer of electrons in the absence of ferredoxin. The DNAderived PFOR protein sequence of Cryptosporidium parvum appears to be similar to that of Giardia lamblia.

Side Effects

Adverse events associated with the use of nitazoxanide include **a**bdominal pain, diarrhea, vomiting, headache, flatulence, fever, eye discoloration, rhinitis and discolored urine.

Special precautions: liver disease, kidney disease, HIV infection, pregnancy, breast feeding**.** To be taken with food.

Available as oral suspension (100 mg/5mL) and tablets 500 mg

Dosage: Children (ages 1-3 years): 100 mg twice daily for 3 days , children (ages 4 to 11 years): 200 mg twice daily for 3 days , adults 500 mg twice daily for 3 days.

Did you know?

The history of reflex hammers.

- Following the simultaneous description of muscle stretch reflexes by Heinrich Erb and Carl Westphal in 1875, neurologists used direct finger taps or chest percussion hammers to elicit these phenomena.
- Because of inadequacies of chest percussion hammers for eliciting muscle stretch reflexes, a variety of hammers were developed specifically for this purpose.

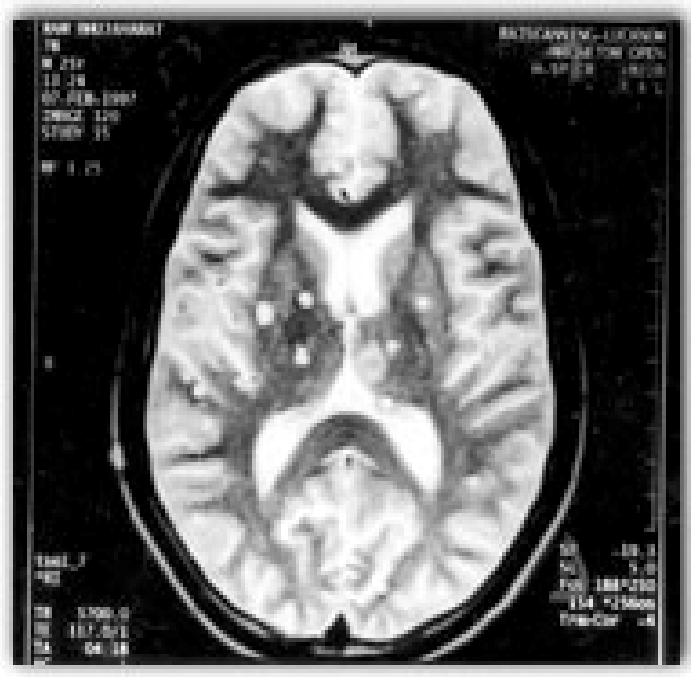
- In 1888, J. Madison Taylor, working for S. Weir Mitchell at the Philadelphia Orthopedic Hospital, designed the first such "reflex hammer."
- Taylor's hammer had a triangular rubber head and a short, flattened metal handle.
- Krauss (1894), Berliner (1910), Troemner (1910), Babinski (1912), and Wintle (1925) also designed popular reflex hammers.
- Many of these hammers and several others are still in use.

Ref: *Lanska DJ, Department of Neurology, and University Hospital of Cleveland, The history of reflex hammers. Neurology. 1989 Nov; 39(11):1542-9*

Quiz Mania 36

Investigation? Diagnosis? Treatment?

Patient presented with repeated generalized seizures. Neurological examination was unremarkable, CSF was normal. The investigation shown below clinched the diagnosis.



Reply before 20th. November *2004 to* ***incheshealth@hathway.com***

Answer to Quiz Mania 35

Bifascicular block (RBBB with LPHB) with atrial fibrillation: