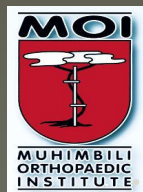


FOLIC ACID AND NEURAL TUBE DEFECTS: what do WE actually PREVENT?

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Neural tube defects:

Definition: Maldevelopment in a fetus/ embryo with resultant anomalies in the brain and spinal cord and their surrounding structures

Prevalence

Worldwide- 2 per 1000 live births. Incidence low in countries with folic acid treatment to mothers during and before pregnancy

In Tanzania 3.02 per 1000 live births

Kinasha et al , 2002; The incidence and pattern of neural tube defects in Dar es salaam

Hospitals treating NTD children in Tanzania



BUGANDO

Hydom Christian Health Centre

KCMC

**MOI 2005 to date. (≈ 200 patients)
Muhimbili Medical Centre ?;
CCBRT 1996-2005 (≈ 102 patients)**



Neural tube defects:

Encephalocele

Average 2 patients/month admitted at MOI

- in complex forms; so do the surgical planning



Frontoethmoidal



Parietal

Occipital encephalocele

Repair achieved in one stage operation



Pre surgery
8/12 old

Post surgery
2yr old

Frontoethmoidal encephalocele

Sometimes repair requires multistage operations



Pre surgery



Post surgery #1



#2 etc



Occipital encephalocele

Desperately
awaiting for
surgery

- MOI wards
- congested
 - long list
 - scarce resources
e.g. VP shunts etc



Meningocele, meningomyelocele or spina bifida



26% of hydrocephalus cases at MOI have spina bifida

They do have other malformations such as talipes equino varus

Known associated disabilities include bowel and urinary bladder paralysis

Treatment:

1. Spina bifida (surgical) repair
2. VP shunt
3. Lifelong rehabilitation program

Hydrocephalus

Types:

1. Primary hydrocephalus (i.e. congenital)
2. Secondary hydrocephalus

- Brain tumors, meningitis, hemorrhage

Warf B.C. 2005; *JNS pediatrics* 102; 1-15.

Types

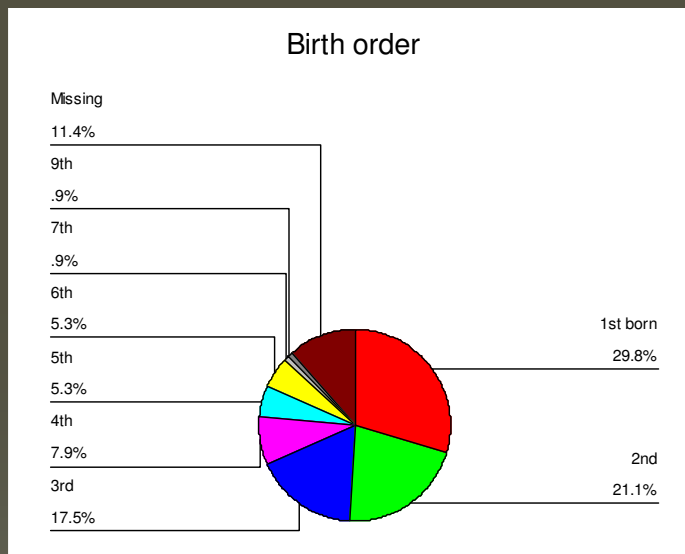
1. Non infectious hydrocephalus
2. Post infectious hydrocephalus



Non infectious hydrocephalus is mainly congenital, and highly associated with maternal malnutrition. Folic acid Rx reduces the risk of occurrence.

MOI hydrocephalus series 2005 - 2008

In 114 patients, 49.1% were non-infectious hydrocephalus,
50% post-infectious hydrocephalus



29.8% of cases were 1st born.
Their mothers age younger than 25yo
Average height of the mothers 153.3cm

Chronic under nutrition?

MOI hydrocephalus series

Average OFC at VP shunt operation was 54.5 cm (range 40 – 70 cm)



The bigger the OFC the likelihood of malnutrition, VP shunt failure and other complications. Therefore prolonged hospitalization.

Recommended early detection and treatment

*Kinasha et al, 2005; East Central Afr J Surg 10(2); 55-59
Complications of VP shunts in children in Dar es salaam*



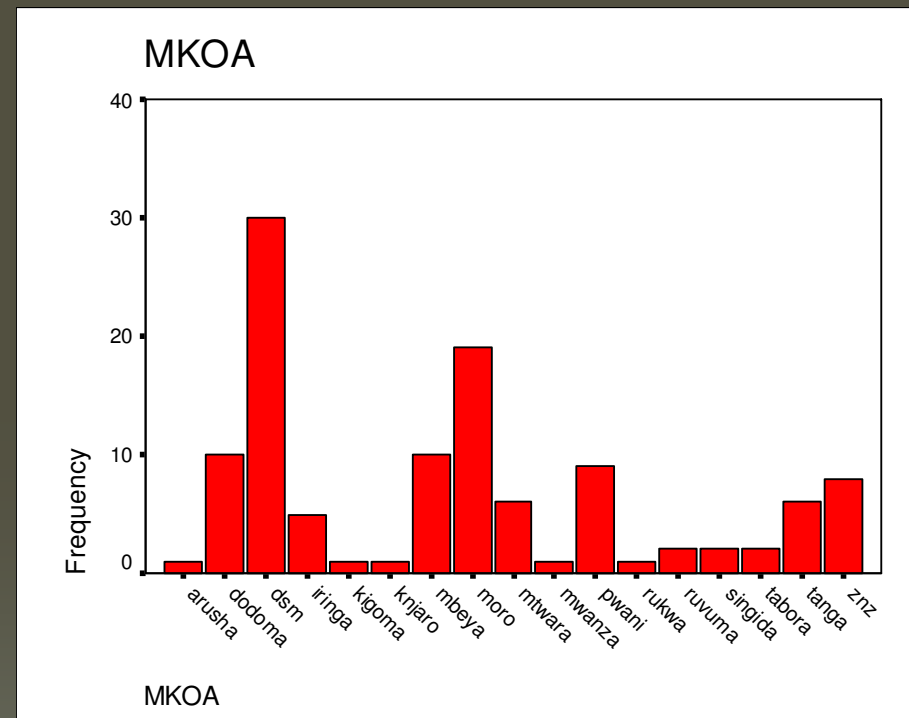
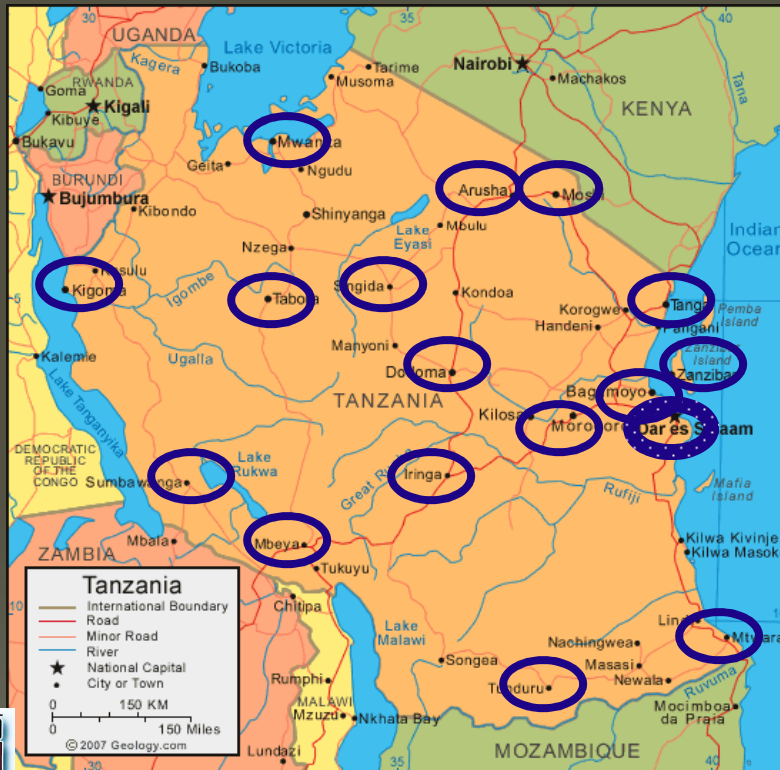
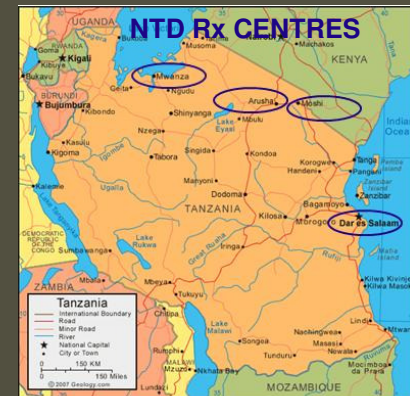
OFC 70cm
Transillumination test +ve
i.e. literally no brain, only CSF fluid.
Cerebral Palsy is inevitable!



+ve trans illumination test

MOI hydrocephalus series

MOI receives patients from all over the country



MOI hydrocephalus series

The main mode of treatment is VP shunt.

Sporadically ETV has been performed. Soon MOI will fully embark on ETV as the first line treatment for hydrocephalus.

Partners in the Treatment of NTDs at MOI

Government thru MOHSW

Association for spina bifida and hydrocephalus Tanzania

International donors e.g. IF



Case Report: M.A.M. 8yo girl from Tanga

At 2y age:- VP shunt due to hydrocephalus

At 5y age:- Shunt blockage requiring revision

At 6y age:- Developed ascitis, became breathless

Full investigation (blood, sputum, ultrasound, cardiac echo, x-rays, CT scans, CSF samples) no clear diagnosis therefore treated empirically as TB patient. (6 months anti TB therapy)

At 7y age:- Still the same, no improvement! VP shunt removed permanently. Intermittent ascitic tap performed. Later on V-Pleural shunt done, developed pleural effusion. Lastly V-Atrial shunt performed 8 months ago.



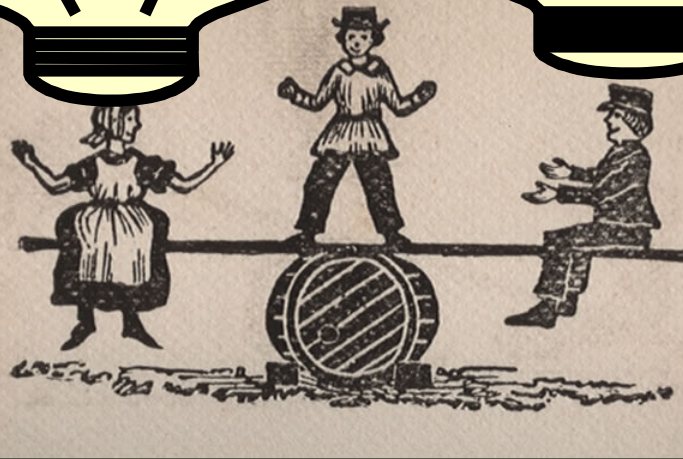
what do WE actually PREVENT?



hoW do WE actually PREVENT?

Folic acid supplements
plus ...1,2,3....

Hospital only is the answer!



NTD 2 per 1000 live births
20% rate of VP shunt infection and failure
Unknown mortality rate NTD babies in Africa









Thank you!

