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Intermittent Preventive Treatment The challenge of implementation

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The Direct consequences of malaria during pregnancy are more prevalent in unstable transmission areas. In those areas pregnant women have little or on immunity. In those women malaria causes hyperpyrexia, hypoglycaemia, severe haemolytic anaemia, cerebral malaria and pulmonary oedema and maternal death if not treated. (Looareesuwan et al 1985). Fever in pregnancy may bring about abortion or intrauterine foetal death. The average malaria in pregnancy case fatality varies from 1% in low endemic areas to 13.1% in epidemics (Brabin 7003).

The indirect consequences of malaria during pregnancy are more prevalent in stable transmission areas. In such settings the main maternal effect is anaemia, which is frequently severe and a risk factor for maternal death. The contribution of malaria to maternal mortality is estimated as 0.5-23% of hospital based deaths and 2.9-17.6% of community based maternal deaths. The second important effect of malaria in pregnancy in areas of stable transmission is low birth weight (LBW). 20% of children born in Malawi are LBW; malaria was most important contributory factor to LBW (verhoef et al 1988). LBW in Malawi contributed to 80% of all neonatal deaths and 38% of infant mortality (MC Dermott et al 1996). LBW is the single biggest risk factor for neonatal mortality and major contributor to infant mortality (Mc Cormick 1985).

Malaria in pregnancy interventions. The WHO strategies framework for malaria control during pregnancy in stable transmission areas recommends 3 pronged approach:

i) use of intermittent preventive treatment (IPT), currently with sulphadoxine-pyremethamine
ii) insecticide treated nets (ITNs)
iii) and case management of malaria illness.

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Intermittent preventive treatment (IPT).

Definition. "full curative treatment doses of an effective antimalarial during given women at predefined intervals during the second and third trimesters of pregnancy …….given irrespective of peripheral parasite status and irrespective of clinical symptoms" (WHO, 2002)

The delivering system of IPT should be by direct Observation treatment (DOT) during routine antenatal care visits and to be delivered free of charge.

There is evidence that IPT is effective in stable /intense transmission areas. Schultz. 1994found that IPT with sulphadoxine pyremethamine significantly reduced placental paracitemia- Also IPT with sulphadoxine pyremethamine can reduce sever anaeamia in primigravid women by approximately 40% (shalman et al 1999). Parise et al 1998 showed that IPT effectively improved birth weight by 39% However the evidence of the effect of IPT in unstable/low intensity transmission areas is different. Studies in Asia in areas of low transmission have demonstrated associations of malaria during pregnancy with sever illness and LBW (Luxemburger, c et al 2001). Newman et al (2003) suggests that IPT may be inappropriate in such a salting given the very low prevalence of placental parasitemia in non-epidemic years. Based on th evidence of IPT in areas of unstable transmission the strategies recommended in those management and ITNS.

Challenges to implementation of IPT. The malaria epidemiology in Sudan is a challenge for malaria control in pregnancy. The malaria epidemiology includes; desert fringe malaria, urban malaria. Seasonal malaria, irrigated malaria, high transmission malaria areas. Hence the interventions given differing priorities in different zones.

- Intervention choice: RH and NMCP co operation is vital. The choice of drugs for IPT is not easy. The drugs must be safe for the mother and fetus. They must be effective and accessible to users and the compliance must be good. At the time being the mechanism of action of IPT is poorly understood. the choice of drugs for case management is also difficult due to during resistence. It is extremely hard measure drug efficacy in pregnant women (P olumese-WHO Geneva)there is a need for pharmacovigilance it new drug combinations are to be used.

Mechanism for delivery. There are many constraints encountered in the delivery of IPT

- IPT is best delivered as part of a comprehensive package of ant-natal (ANC), however 70% of women in Sudan attend $\geq$ 1 ANC visit .

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- Women may not accept being charged for something (SP) to prevent a problem that they are not symptomatic of (not complaining of malaria).
- The fellow of drug supply to ANC may be interrupted
- The registration of the IPT drugs chosen may face some difficulties.
- IPT is given as directly observed treatment in ANC clinics. However there are logistic problem of having clean water and clean cups.

Training needs. Health workers need to be trained in IPT. They should understand it properly and adhere to it. The training must involve the lowest cadres as they are often the one delivering ANC care.
The community acceptance and compliance is affected by community recognition of the problem and hence the community needs to be educated in the whole problem malaria, its complications and IPT.

Monitoring and Evaluation of IPT. A pilot framework has been developed for monitoring and evaluation of the implementations of IPT through ANC. The goal is to incorporate as much data collection as possible into routine HMIS.

The following are suggested indicators:

Process indicators:

- %pregnant women receiving IPT under direct observation
- % antenatal clinic staff trained in malaria during pregnancy in the last 6 months
- % of pregnant women given rougher /ITN or purchased INT during ANC
- % number of days with stock-out of SP in the last molls

Outcome indicators:

- % pregnant women who report that they slept under an ITN the previous night at second ANC visit.

Impact indicator:

- % screened women with severe anaemia (Hb$\leq$ 7g/dl) in third trimester by parity
- % LBW newborns (< 2500g) by parity.

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Recommendations:

1. Establish a standardized way of assessing anti malarial drugs efficacy in semi-immune pregnant women.
2. IPT and ITNs should be put in epidemic preparedness plans that could be implemented at the first sign of an epidemic.
3. Post marketing surveillance of new antimalarial drugs combinations-particularly ACTS.
4. Evaluate the burden of malaria in pregnancy during an epidemic and examine prevention and intervention opportunities (Newman et al 2003)

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