Meeting to Review National Malaria Control Programs in the ECOWAS Region

Special Session on Malaria in Pregnancy

Eda Oba Hotel, Lomé, Togo, 4 - 7 April 2017

MEETING REPORT

1. Introduction

Malaria in Pregnancy: Overview

1. Introduction

The Malaria in Pregnancy Consortium held a special session on malaria in pregnancy (MiP) at the ECOWAS National Control Malaria Managers' Review Meeting organized by the West Africa Health Organization (WAHO), 4-7th April 2017 in Lomé, Togo. The meeting took place in a context where countries are required to prepare their submissions to the Global Funds to fight Aids, Tuberculosis and Malaria for the period 2018-2020, and served to facilitate peer to peer learning and support to countries negotiations with the Global Fund. This meeting was also an opportunity for countries to improve their planning and reach a regional consensus on the implementation of malaria control activities articulated in ECOWAS Regional Strategic plan for malaria control and elimination. The 2016 ECOWAS meeting report is available.

The ECOWAS meeting was attended by 69 participants representing National Malaria Control Programs Managers (NMCPs) and NMCP Monitoring and Evaluation Officers of the 15 ECOWAS member States, WHO, UNICEF, RBM WARN, the private sector and nine members of the MiP Consortium. The NMCP managers and Reproductive Health Officers from Benin, Burkina Faso, Gambia, Ghana, Mali and Gabon (noting Gabon is not in the ECOWAS region)

were supported by the MiP Consortium, with cofunding from the Bill and Melinda Gates Foundation and the European and Developing Countries Clinical Trials Partnership (EDCTP-2)-funded Implementation of Malaria in Pregnancy Policy Action Consortium IMPPACT (CSA-2014-276 IMPP-ACT) project. The IMPPACT project aims to ensure the translation of WHO recommendations on malaria in pregnancy control policy resulting from the MiP Consortium's research into country level policy and implementation plans.

The aim of the special session on MiP was to share the latest research from the MiP Consortium's clinical trials and studies on the treatment and prevention of malaria in pregnancy in sub-Saharan Africa undertaken between 2009-2015, and to discuss with national and regional policy stakeholders any

implications for malaria and reproductive health programmes. The meeting also provided an opportunity to learn from the national Malaria and Reproductive Health departments about the challenges with changing and implementing malaria in pregnancy policy in the context of ANC, and to outline the type of technical support needed.

2. Overview of the MiP Consortium: Jenny Hill, LSTM, UK

The MiP Consortium is a global venture led by LSTM consisting of 41 partner institutions in 29 countries. It was established in 2007 with an initial grant of US$ 30 million from the Bill & Melinda Gates Foundation, and is also supported by the European and Developing Countries Clinical Trials Partnership (EDCTP) and the EU. The partnership has undertaken an eight-year research programme to provide new evidence to improve the control of malaria in pregnancy across a range of transmission settings. Our primary aims are several: First to identify at least two antimalarial treatments that are safe, effective and practical to use for the case management of malaria in pregnancy; Second, to identify new safe and effective antimalarial drugs for its prevention in pregnancy; Third, to identify new screening strategies with rapid diagnostic tests that can be used in rural setting to replace drug-based prevention strategies in areas with reduced/low transmission or high drug resistance; and fourth, to better define the overall burden of malaria in pregnancy in Asia and Latin America and determine the optimal strategy for the control of malaria in pregnancy in these areas. In addition, we have conducted studies to explore women's access to and use of care packages associated with malaria in pregnancy in different contexts. We work closely with WHO to ensure evidence generated by our research feeds into global health policy.

3. Burden of MiP in the West Africa Region: Patrick Walker, Imperial College, London, UK

Summary

Unprecedented investment and effort in malaria control has produced declines in malaria transmission across Africa but substantial burden remains. This is particularly the case in West Africa, the region of the world with the highest transmission prior to control and where prevalence in pregnant women can rise above 70%.

As a result, if not adequately protected, most women in West Africa remain at high risk of malaria in pregnancy, resultant high density placental infections and negative birth outcomes. In much of West Africa a high proportion of non-pregnant women harbour low-density parasites asymptomatically. Thus, malaria in pregnancy is very commonly caused by already-infected women becoming pregnant rather than women found to be pregnant at enrolment. This is demonstrated by the very high proportion of women infected at enrolment in recent trials of Intermittent Screening and Treatment (ISTp) and, as infections persist well into the dry season, highlights the importance of providing effective care throughout the year. These results highlight the need to prevent infection through promoting bed-net use in all women of child-bearing age, particularly in young women prior to and during their first pregnancy, who experience the most severe placental infections and are currently least likely to be using an insecticide treated net. It also highlights the need to provide all women with prompt intermittent preventative therapy (IPTp) with Sulphadoxine-Pyrimethamine (SP) which retains near perfect efficacy in West Africa. IPTp uptake is higher in West Africa relative to other regions of the world and is improving steadily but the proportion of women reporting receipt of IPTp in population-based surveys continues to lag behind the proportion of women regularly attending ANC.

Discussion

It is difficult to protect primigravidae throughout pregnancy. They should use an ITN before getting pregnant and start early with IPTp. But ITN use among young women is low and research is required to assess the best method in which to reach these women.

Associated publications:

1. Griffin JT, Bhatt S, Sinka ME, *et al.* Potential for reduction of burden and local elimination of malaria by reducing Plasmodium falciparum malaria transmission: a mathematical modelling study.

   Lancet Infect Dis 2016; **16**: 465–72.

2. Walker PGT, Floyd J, ter Kuile F, Cairns M, Oesterholt M, Magistrado P. Estimated impact on birth weight of scaling up intermittent preventive treatment of malaria in pregnancy given sulphadoxine-pyrimethamine resistance in Africa: A mathematical model.

   PLOS Med 2017; **14**: e1002243

Session 1: Use of ACTs for case management of malaria in all trimesters of pregnancy - Halidou Tinto, CRUN

4. Efficacy and safety of four ACT regimens for the treatment of clinical malaria in 2nd and 3rd trimesters in four countries in Africa : Halidou Tinto, Clinical Research Unit of Nanoro (CRUN), Burkina Faso

Kenya has 14 malaria endemic counties, 8 around Lake Victoria and 6 in Coastal Province. The Kenya Malaria Strategy 2009-2018 (revised 2014) states that IPTp shall only be implemented in the malaria endemic zones in addition to ITNs and appropriate case management. All pregnant women in the 14 malaria endemic counties should receive at least three doses of IPTp with SP at ANC. Community Health Volunteers (CHVs) and health workers will sensitize pregnant women on early ANC attendance to receive IPTp doses under observation. To boost coverage with the previous policy (at least two doses), a memo from both Directors (Medical Services and Public Health and Sanitation) was issued in April 2011 reinforcing the national policy (at least two doses, by DOT). The memo included a statement on folic acid tablets to ONLY be administered 14 days following administration of SP as IPTp (high dose of folic acid-5 mg). Subsequently the National policy for iron and folic acid supplementation in pregnant mothers in Kenya, January 2013 stipulates low dose folic acid (0.5 mg).

The National guidelines for diagnosis, treatment and prevention of malaria in Kenya 2016 stipulate treatment of uncomplicated malaria in pregnancy in the first trimester is a 7-day therapy of quinine and not to withhold AL or any other treatment in 1st trimester if quinine is not available. AL is recommended in the 2nd and 3rd trimesters. Oral quinine may also be used but compliance must be ensured. Treatment of severe malaria in pregnancy is parenteral artesunate; in the absence of artesunate, artemether or quinine can be given. Dissemination of this policy has not yet taken place.

Associated publications:

1. PREGACT Study Group, Pekyi D, Ampromfi AA, Tinto H, Traore-Coulibaly M, Tahita MC, et al. Four Artemisinin-Based Treatments in African Pregnant women with Malaria. The New England journal of medicine. 2016;374(10):913-27.

2. Dellicour S, Sevene E, McGready R, Tinto H, Mosha D, Manyando C, et al. First-trimester artemisinin derivatives and quinine treatments and the risk of adverse pregnancy outcomes in Africa and Asia: A meta-analysis of observational studies. PLoS Med. 2017;14 (5):e1002290.

5. Safety of ACTs and quinine in early pregnancy in Africa: a meta-analysis: Halidou Tinto, Clinical Research Unit of Nanoro (CRUN), Burkina Faso

Summary

This was an observational study to address safety concerns of ACT use in the 1st trimester identified in animal models, specifically embryo-toxicity and teratogenicity of artemisinin's in early pregnancy (equivalent to 6-12 weeks' gestation in humans). There is limited experience with intentional or inadvertent treatment with artemisinin in the 1st trimester, given that WHO policy states that artemisinin's are contraindicated in the 1st trimester (i.e. limits intentional treatment) and difficulties of identifying women in very early pregnancy with inadvertent exposure to ACTs.

An individual patient level data (IPD) meta-analysis was conducted to compare the risk of adverse pregnancy outcomes between artemisinin and quinine exposures in 1st trimester pregnancy in Africa. Data sources included three prospective cohort studies undertaken by the MiP Consortium in Burkina Faso, Kenya and Mozambique (Tinto et al., 2015, Dellicour et al., 2015), other prospective cohort studies from sub-Saharan Africa (Mosha et al., 2014, Manyando et al., 2010, Rulisa et al., 2012), and aggregated data from the Thai-Myanmar border (Moore et al., 2016).

Discussion

This study used data from prospective observational studies because with the uncertainty of safety of ACTs it is not possible to prospectively randomize in a trial. There were concerns about quinine use for malaria in the first trimester when it is not clear whether it is the malaria infection or quinine that is responsible for uterus contractions and possible miscarriage. Record linkage approaches for pregnancy pharmacovigilance using routinely generated health records could be a pragmatic and cost-effective approach for pharmacovigilance in early pregnancy, but may not be possible in resource-poor settings unless comprehensive records are available.

A course of quinine is long and associated with unpleasant side effects, whereas the course of an ACT is short (3 days) and has less side effects.

The results from this study have been presented to the WHO and will review the evidence with a view to revise the WHO malaria treatment guidelines, so ACT's can be used in the first trimester and more studies can be conducted to ascertain the safety of ACTs.

Associated publications:

1. Tinto H, Sevene E, Dellicour S, Calip GS, d'Alessandro U, Macete E, et al. Assessment of the safety of antimalarial drug use during early pregnancy (ASAP): protocol for a multicenter prospective cohort study in Burkina Faso, Kenya and Mozambique. Reprod Health. 2015;12:112.

Session 2: IPTp with 2 vs 3 or more doses of

6. Effectiveness and cost effectiveness of 2 vs 3 doses of IPTp with SP in Africa: Kassoum Kayentao, MRTC, Mali

Summary

The rationale to explore 3 or more doses (3+) of SP for IPTp was to extend protection during of the last 4-10 weeks of pregnancy, to compensate for moderate SP resistance which shortens duration post-treatment prophylaxis, and to improve coverage of 2-dose IPTp Three doses of IPTp-SP are already recommended for HIV+ women (not on cotrimoxazole) and for HIV-negative women in several countries.

A meta-analysis of the efficacy and safety of 2 versus 3+ doses of SP for IPTp was performed using data from 6281 pregnancies from 7 trials in Burkina Faso, Kenya, Malawi (2), Mali, Tanzania and Zambia. The results showed that 3+ doses were more effective, reducing the risk of LBW by an extra 20% and increasing mean birth weight by an extra 56 gm. The 3+ dose groups also had 49% less placental malaria and 40% less severe maternal anaemia. There were no differences in rates of serious adverse events. The findings were consistent across the sites, and across subgroups including HIV status, gravidity, ITN use, SP resistance, and mean dose. Cost-effectiveness analysis shows that 3+ doses is a highly cost-effective intervention to reduce LBW (Fernandes et al., 2015). The evidence resulted in the 2012 WHO policy update of IPTp, which recommends a dose of SP at each scheduled ANC visit until delivery, at least one month apart,

and the last dose can be administered up to delivery without safety concerns (World Health Organisation, 2012).

Discussion

In facilities without ultrasound it can be problematic to assess the gestational age reliably to be able to start IPTp 'early'. The new recommendation is to

start at 13 weeks. If there is no ultrasound available, you can still use if a woman feels movement of the baby as the point when to start IPTp.

Although the new FANC schedule now recommends eight 'contacts' or visits, SP only needs to be given when visits are at least 4 weeks apart, so not every time.

Community based strategies are an option but carry the risk that women do not attend antenatal care and do not receive the other services that they need.

However, it should be examined if IPTp-SP can be an opportunity integrated into the seasonal malaria prevention, when door-to-door visits are conducted; this may be a too good opportunity to provide IPTp.

Associated publications:

1. Kayentao K, Garner P, van Eijk AM, Naidoo I, Roper C, Mulokozi A, et al. Intermittent preventive therapy for malaria during pregnancy using 2 vs 3 or more doses of sulfadoxine-pyrimethamine and risk of low birth weight in Africa: systematic review and meta-analysis. JAMA. 2013;309(6):594-604.

2. Fernandes S, Sicuri E, Kayentao K, van Eijk AM, Hill J, Webster J, et al. Cost-effectiveness of two versus three or more doses of intermittent preventive treatment for malaria during pregnancy in sub-Saharan Africa: a modelling study of meta-analysis and cost data. The Lancet Global health. 2015;3 (3):e143-53

Session 3: Alternative drugs for IPTp and alternative screen and treat approaches (ISTp)

7. Impact of SP resistance on the effectiveness of IPTp with SP in sub-Saharan Africa: Annemieke van Eijk, LSTM, UK

Summary

Sulphadoxine-Pyrimethamine (SP) is the only antimalarial currently recommended for intermittent preventive therapy in pregnancy (IPTp) in sub-Saharan Africa. However, high level resistance threatens its efficacy in some areas. To support WHO with the design of a molecular policy decision tool for IPTp, we conducted a series of studies to determine the relationship between the population prevalence of resistance mutations in the parasite genes Pfdhfr and Pfdhps and the association between IPTp use and the risk of low birth weight (LBW).

In vivo studies of the efficacy of SP to clear parasitaemia in pregnant women conducted in 6 countries showed a decreased efficacy of SP in East Africa and a decrease in time to recurrence of infection with an increase of the molecular marker Pfdhps-K540E, as measured in the same population. However, IPTp was still associated with a significant reduction in LBW in the same 6 countries when evaluated in surveys at delivery. Data was extracted from published literature on LBW and number of SP doses and matched with molecular markers of SP resistance by time and Location. Meta-analysis showed a trend towards lower effectiveness with increasing resistance. An individual patient-level analysis was conducted using national survey data in areas with high SP resistance, defined as >80% Pfdhps-K540E, whereby participants were matched for potential confounding factors. A linear decrease in effectiveness of IPTp with increasing prevalence of Pfdhps-K540E was observed, but even in areas with >95% Pfdhps-K540E, IPTp-SP remained associated with significantly less LBW. By contrast, in areas defined as super resistant (>10% Pfdhps-A581G), no association between IPTp and LBW was evident.

Discussion

What is importance of resistance observed in East Africa being imported to west Africa? Yes, it is possible for resistant parasites to cross Africa but it is more likely that resistance develops locally. A study by Steve Taylor1 showed resistance developed inherently in each site and not by movement.

Associated publications

1. Taylor SM, Alejandro LA, Harrington WE, Goheen MM, Mwapasa V, Chaluluka E et al. Independent lineages of highly sulfadoxine-resistant Plasmodium falciparum haplotypes, Eastern Africa. Emerging Infectious Diseases. 2014;20(7):1140-8.

8. Alternative drugs or strategies to replace SP for IPTp in East and West Africa

Mwayi Madanitsa: College of Medicine, Malawi

Results from previous trials of several alternative drugs to SP for IPTp have been disappointing, including MQ, chloroquine-azithromycin, SP-azithromycin and SP-amodiaquine.

Two recent randomised controlled trials in areas of high SP resistance in Kenya and Uganda compared IPTp with dihydroartemisnin-piperaquine (DP) with IPTp-SP. DP offers an attractive alternative due to long half-life of piperaquine, once-daily dosing, demonstrated efficacy and safety in pregnancy. The trial in Kenya was a 3-arm trial comparing IST-DP and IPTp-DP vs IPTp-SP and included 515 women in the IPTp-SP arm and 516 in IPTp-DP (Desai et al., 2015). The trial in Uganda ~100 women in each of 3 arms comparing IPTp-SP, IPTp-DP 3 doses, IPTp-DP monthly (Kakuru et al., 2016).

Results showed that IPTp-DP was very effective in preventing several adverse malaria in pregnancy outcomes across all gravidae (see Table 2) and monthly (3-4 courses) of DP well tolerated. There was little to no impact of DP on foetal growth but neither trial was powered to detect impact on birth outcomes (e.g. birthweight). Based on these results, IPTp-DP is a promising potential replacement to SP in areas where the efficacy of IPTp with SP is threatened and WHO's MPAC recommended a larger confirmatory trial on safety and efficacy, together with studies on acceptability, feasibility and cost effectiveness.

Intermittent screening and treatment as an alternative strategy to IPTp

The concept of intermittent screening and treatment (ISTp) is to provide scheduled malaria screening using an RDT and treating positive women with a long acting ACT thereby clearing existing infections, providing additional post-treatment prophylaxis for up to six weeks, and ensuring that only women with detectable malaria infection receive treatment.

West Africa trial - IST with AL vs IPTp with SP

An open, individually randomized, non-inferiority trial of IPTp-SP versus ISTp was conducted in 5,354 primi- or secundigravidae in four West African countries with a low prevalence of resistance to SP (The Gambia, Mali, Burkina Faso and Ghana). Women in the IPTp-SP group received SP on two or three occasions whilst women in the ISTp group were screened two or three times with a RDT and treated if positive for malaria with artemether-lumefantrine (AL).

The trial concluded that ISTp with AL was non-inferior (i.e. as effective) as IPTp-SP in the prevention of low birth weight, maternal anaemia and placental malaria, though the incidence of clinical malaria was higher in the ISTp arm. Since the trial monthly IPTp-SP is now recommended, this may further increase the advantages of IPTp-SP over IST. It was concluded that IPTp-SP should be continued where SP resistance is low. In areas where SP resistance is high, and in the absence of an effective alternative medication to SP for IPTp, ISTp-AL is a potential alternative to IPTp. It may also have a role in areas where malaria transmission is low and for the prevention of malaria in HIV positive women receiving cotrimoxazole prophylaxis in whom SP is contraindicated.

East Africa trials – IST with DP vs IPTp with SP

The concept of intermittent screening and treatment (ISTp) is to provide scheduled malaria screening using an RDT and treating positive women with a long acting ACT thereby clearing existing infections, providing additional post-treatment prophylaxis for up to six weeks, and ensuring that only women with detectable malaria infection receive treatment.

Results from a pooled analysis of two trials in 2902 women in Kenya (Desai et al, 2015) and Malawi (Madanitsa et al, 2016) showed ISTp with dihydroartemisnin-piperaquine (DP) was not superior to at least 3 doses of IPTp-SP. Women receiving ISTp-DP had a 31% higher risk of any malaria infection at delivery, 14% higher risk of any malaria infection during pregnancy, 19% higher risk of placental malaria, and 52 gram lower birth weight in paucigravidae. Results suggested a higher risk of any adverse live birth outcome. However, DP was well tolerated.

There are two possible explanations for the ineffectiveness of ISTp. The first is lack of sensitivity of RDTs; sensitivity was high at first ANC visit, but dropped substantially in subsequent visits.

The strategy therefore missed many low-density infections and these women did not receive DP and did not benefit from its post treatment prophylaxis resulting in persistent sub-patent infections. The second is the continued effectiveness of IPTp-SP despite prevalent SP resistance. Three or more doses of SP mitigates the shortening of post treatment prophylaxis by SP resistance, providing continuous suppression of parasite densities below. In addition, SP may have a beneficial broad antimicrobial activity on the maternal gut and/ or reproductive tract.

Associated publications

1. Desai M, Gutman J, L'Lanziva A, Otieno K, Juma E, Kariuki S, et al. Intermittent screening and treatment or intermittent preventive treatment with dihydroartemisinin-piperaquine versus intermittent preventive treatment with sulfadoxine-pyrimethamine for the control of malaria during pregnancy in western Kenya: an open-label, three-group, randomised controlled superiority trial. Lancet. 2015;386(10012):2507-19.

2. Kakuru A, Jagannathan P, Muhindo MK, Natureeba P, Awori P, Nakalembe M, et al. Dihydroartemisinin-Piperaquine for the Prevention of Malaria in Pregnancy. The New England journal of medicine. 2016;374(10):928-39.

3. Tagbor H, Cairns M, Bojang K, Coulibaly SO, Kayentao K, Williams J, et al. A Non-Inferiority, Individually Randomized Trial of Intermittent Screening and Treatment versus Intermittent Preventive Treatment in the Control of Malaria in Pregnancy. PloS one. 2015;10(8):e0132247.

4. Madanitsa M, Kalilani L, Mwapasa V, van Eijk AM, Khairallah C, Ali D, et al. Scheduled Intermittent Screening with Rapid Diagnostic Tests and Treatment with Dihydroartemisinin-Piperaquine versus Intermittent Preventive Therapy with Sulfadoxine-Pyrimethamine for Malaria in Pregnancy in Malawi: An Open-Label Randomized Controlled Trial. PLoS Med. 2016;13(9):e1002124.

Discussion

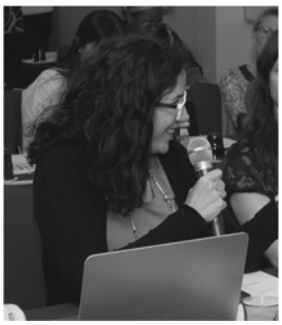
Do artemisinin's have a place in the prevention of MiP given their very short half-life?

Yes, ACTs can be used when combined with a long working antimalarial, whereby the short acting artemisinin derivative clears the infection, but does not provide post treatment prophylaxis. The combination drug can provide the prophylaxis.

9. Lessons learnt from IPTp with Mefloquine clinical trials in HIV-Infected and uninfected women in Benin, Gabon, Kenya, Mozambique and Tanzania:

Raquel Gonzalez, IS Global, Spain

Summary



Two randomised controlled trials were undertaken in five countries to: 1) evaluate the safety and efficacy of MQ as IPTp in HIV-negative women in the context of long lasting insecticide treated nets (LLITNs) use; 2) evaluate the safety and efficacy of MQ as IPTp in HIV-infected women taking daily CTXp and in the context of LLITNs.

The results of the trial in HIV-negative women showed that MQ had a better antimalarial prophylactic efficacy than SP and had a comparable safety profile on pregnancy outcomes. However, the tolerability of MQ (15mg/kg) was worse than that of IPTp-SP, even when splitting the dose over two days. MQ is therefore not a suitable alternative to SP for IPTp at the dose used in this study. The one year follow up of infants showed no differences between study arms.

The results of the trial in HIV-positive women showed that the addition of an effective antimalarial drug to daily CTXp and LLITN halved the risk of maternal parasitaemia at delivery and reduced the incidence of hospital admissions. However, tolerability of MQ (15mg/kg) was worse compared with that of CTXp alone, and the HIV viral load and the risk of mother-to-child transmission of HIV was increased in MQ recipients, indicating that MQ should not be used for IPTp in this group. Therefore there remains an urgent need to address the prevention of malaria in HIV-infected pregnant women.

Discussion

In the MQ trial, were women using nets and IRS in the homes? Yes, they used LLITNs (they were delivered as part of the study intervention), however IRS depended on the country but we did not collect the data.

Did you look at the antiretroviral drugs (ARVs) that were taken the women that could have influence the rates of transmission of HIV from mother to child (MTCT) ?

Information from administered ARVs were recorded. At the time of the study, nevirapine (NVP) was taken from the 14th week and at delivery for prevention of MTCT. We adjusted for ARV use in the multivariate analysis of risk factors associated with MTCT of HIV and MQ was still found to be associated with an increased risk of MTCT.

Associated publications

1. Gonzalez R, Desai M, Macete E, Ouma P, Kakolwa MA, Abdulla S, et al. Intermittent preventive treatment of malaria in pregnancy with mefloquine in HIV-infected women receiving cotrimoxazole prophylaxis: a multicenter randomized placebo-controlled trial. PLoS Med. 2014;11(9):e1001735.

2. Gonzalez R, Mombo-Ngoma G, Ouedraogo S, Kakolwa MA, Abdulla S, Accrombessi M, et al. Intermittent preventive treatment of malaria in pregnancy with mefloquine in HIV-negative women: a multicentre randomized controlled trial. PLoS Med. 2014;11(9):e1001733.

10. User and provider acceptability of alternative drugs for IPTp and ISTp under trial conditions in Ghana, Malawi and Kenya - Jayne Webster, London School of Hygiene & Tropical Medicine,

Summary

A model of the components of acceptability of ISTp or IPTp with an ACT in comparison to IPTp-SP was developed. The model was used in a theory based evaluation to test acceptability of each of these interventions in the context of trials across four studies in Ghana (2), Kenya and Malawi assessed the acceptability of: 1) Components of each strategy; and 2) Strategy as a whole. There were some site differences but overall the findings from the four sites were similar. Overall ISTp with an ACT was acceptable. Among pregnant women, diagnosis with a malaria test was valued but there are issues to deal with around pain due to the blood test and in Ghana assurances were needed on whether malaria could be detected in small blood samples (lancet pricks). Health providers on the other hand lacked confidence in the sensitivity and specificity of RDTs, a critical problem to be addressed if the strategy is to be adopted. DP as a replacement for SP was acceptable based on perceived efficacy, but it will be important to deal with side effects and adherence to multi-day regimens in the routine health care context. In Kenya providers were concerned about the ability to maintain supplies of both RDTs for ISTp and DP for IPTp in the routine setting.

Regarding IPTp-SP, pregnant women had low acceptability due to side effects (both sites in Ghana, and Kenya) and perceptions of lack of efficacy. Similarly, health providers questioned continued efficacy of SP in an environment of increasing resistance. Discrete choice experiments in Ghana found that midwives resistance to policy change became less so with increased SP resistance. The acceptability of any of these interventions is delicate, easily reduced and should be carefully monitored.

The results of the trial in HIV-positive women showed that the addition of an effective antimalarial drug to daily CTXp and LLITN halved the risk of maternal parasitaemia at delivery and reduced the incidence of hospital admissions

However, tolerability of MQ (15mg/kg) was worse compared with that of CTXp alone, and the HIV viral load and the risk of mother-to-child transmission of HIV was increased in MQ recipients, indicating that MQ should not be used for IPTp in this group. Therefore there remains an urgent need to address the prevention of malaria in HIV-infected pregnant women.

Discussion

What are characteristics of people who did not adhere to IPTp policy? In East Africa, the concern was efficacy which was justified. In West Africa problem was side effects. Trained staff tend to rotate posts leaving untrained health workers delivering these services. Health workers have good intentions based on their knowledge base, and practices are common across staff in the same facility.

When do you stop administering IPTp-SP in context of elimination? WHO is reviewing the evidence, so no answer yet. This also applies to threshold of SP resistance and when to stop IPTp, work is ongoing. Zanzibar stopped IPTp due to very low prevalence below 0.01%.

On the issue of low sensitivity of RDTs, new more sensitive tests are being developed. Also, as transmission falls, parasite density is higher so the risk is greater. This means RDTs will be more likely to detect these infections, so there is a trade-off between transmission intensity and RDT sensitivity.

Associated publications

1. Hill J, et al. User and Provider Acceptability of Intermittent Screening and Treatment and Intermittent Preventive Treatment with Dihydroartemisinin-Piperaquine to Prevent Malaria in Pregnancy in Western Kenya. PloS one. 2016;11(3):e0150259.

2. Almond D, et al. Provider and user acceptability of intermittent screening and treatment for the control of malaria in pregnancy in Malawi. Malaria journal. 2016;15(1):574.

3. Pell C, et al. The acceptability of intermittent screening and treatment versus intermittent preventive treatment during pregnancy: results from a qualitative study in Northern Ghana. Malaria journal. 2014;13:432.

Session 4: Implications for national policies and programmes

11. Experiences of implementing MiP policies and programmes – National programme perspectives

Dr Patricia Bentil, Malaria in Pregnancy Community Health Planning Service, Ghana

Policy structure: In Ghana, MiP policy is made by the MOH, working through the NMCP, in collaboration with stakeholders under guidance of WHO technical advice, supported by country evidence and experience. Ghana has a MiP Working Group in place, and partners are all working hard reach targets set for MiP indicators. Focussed ANC is one of their greatest strengths in carrying out preventive strategies in MiP.

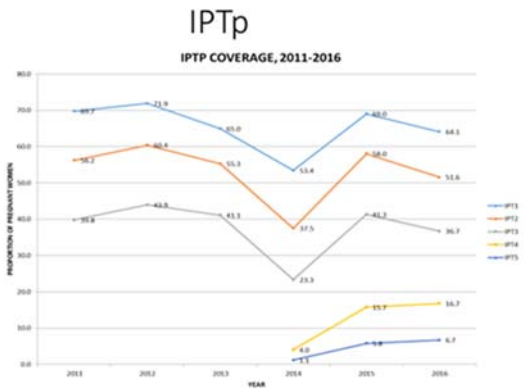
NMCP guidelines for Malaria in Pregnancy, July 2014, reflect the overall goals of Ghana's Malaria Control Programme for pregnant women and their unborn babies. Prevention strategies for malaria in pregnancy are provided free of charge at FANC. This includes up to 5 doses of IPTp starting at 16 weeks, or at quickening, at 4 weekly intervals (min 3, max 5) until delivery and an LLIN given to every ANC registrant. Case management of pregnant women with malaria.

Ghana is now implementing the 2016 WHO ANC guidelines which recommend a minimum of 8 contacts to reduce perinatal mortality and improve women's experience of care. After pregnancy is confirmed at a booking visit (recommended in the 1st trimester), subsequent visits are spread evenly over 2nd and 3rd trimesters to ensure delivery of interventions such as iron and folic acid supplementation, IPTp, in addition to other specialized care.

Coverage of 2 doses of IPTp has declined since 2012 when it reached 60% (see figure 1). Key challenges have been procurement and supply chain management (obtaining accurate quantification from lower levels, and distribution). Private sector facilities do not adhere to national policy and sometimes refuse to provide SP or to register and report data on IPTp; i.e. private sector is included in the denominator but not the numerator. They also access poor quality SP in the open market so the government needs to motivate the private sector to use public sector for procurement of SP. Other constraints are lack of training for lower level workers, attitudes of health workers, registers and documentation issues (longitudinal registers used in ANC, need to be updated), and financing for SBCC in the community including involvement of men.

Comments:

First trimester registration has been improved by strengthening home visits in a pilot study in 8 districts, we hope to scale up to all districts in the country.



Dr Miriam Tall, National Malaria Control Programme, Badalabougou, Mali

In Mali, MiP policy is made by the MOH, working mainly through the NMCP and National Direction of Health through the department of reproductive health group, in collaboration with all malaria stakeholders. The Technical Working Group on MiP meets once a month and partners are working hard reach targets set for MiP through improvement of MiP intervention quality. The group also revises tools regarding the new WHO recommendations and others.

Current MiP policy has been built on harmonization of management of MiP intervention such as ITNs, SP and case management of malaria in pregnancy. This has been mentioned on guidelines shared between all partners involved in MiP intervention implementation, including government and decentralized health structures, and NGOs. The MiP policy targets a set of three integrated approaches to reduce the incidence of malaria during pregnancy: 1) distribute MILD to be provided during ANC, IPTp, and case management of malaria in pregnant women; 2) ensure availability of free ITNs, biological tests and effective antimalarial drugs for case management of malaria in pregnancy; 3) sustain sensitization activities on malaria in pregnancy among target groups including reproductive health care workers, community health workers, and communities.

Main indicators routinely collected in HMIS: in 2016, 113 255 confirmed cases of malaria in pregnancy were diagnosed, representing 5% of all confirmed cases of Mali except for private clinics. The proportion of pregnant women who received one ITN was 82.8%, and 2 000 000 SP doses were distributed. According to the MIS 2015 survey, 78% of pregnant women use ITNs (night before the survey) in Mali with similar rate in rural and urban areas, but lowest rate in Bamako (73%). In 2016, the routine system indicates the coverage of SP1, SP2, and SP3+ to be 81.4%, 59.2%, and 35%, respectively. Data from MIS 2015 indicates coverage of SP2 to be 38 in Mali with the highest in Bamako (48%) and lowest in Mopti (30%).

Challenges include: low use of ANC so 3 doses of IPTp has been a challenge, as has the new recommendation of giving IPTp1 at 13 weeks' gestation without access to ultrasound. The new WHO ANC guidelines with increased frequency of contacts/visits may not improve quality of care, and is not feasible or affordable in Mali. There have also been difficulties in implementing the IPTp DOT strategy.

Lessons learnt from research presented: informed about new results and the support of the 3+ doses strategy over the 2 doses. The NMCP needs mainly financial supports to push the implementation of the new IPTp recommendation. In collaboration with partners the NMCP plans to conduct operational research that includes: 1) assessment of bottlenecks of IPTp-overage; monitoring of SP resistance; 3) and policy change (IMPPACT project).

In perspectives, the NMCP would like to conduct operational research on 1) MiP treatment by CWH at the community level; 2) pharmacovigilance surveillance after the release of WHO recommendation on the use of ACT in first trimester; 3) community distribution of SP in pregnant women.

Couverture en Traitement préventif intermittent (TPI/SP) 3/7

Indicateurs	Résultats 2015	Résultats 2016	Objectifs 2016
Pourcentage de femme enceinte ayant reçu SP1	80,0%	81,37%	80 % des femmes enceintes vues en CPN
Pourcentage de femme enceinte ayant reçu SP2	57,0%	59,18%	80 % des femmes enceintes vues en CPN
Pourcentage de femme enceinte ayant reçu SP3 et plus	22,0%	34,96%	80 % des femmes enceintes vues en CPN

Dr Antimi Solange Jonasse Epousse Ndembi, Director of Reproductive Health, Gabon

Policy structure: In Gabon, MiP policy is made by the MOH working through the NMCP in collaboration with the National Direction of Maternal and Child Health which has offices spread throughout the country. Current policies are the National Plan for Demography and Health 2017-2021, the national strategic plan for control of malaria 2013-2017, the Strategic Plan Gabon Emergent through its social aspect with the universal coverage of the Health Insurance (CNAMGS) that covers 100% of health care of pregnant women. Guidelines for Malaria in Pregnancy includes management of cases with treatment by quinine during the first trimester and artesunate iv followed by oral ACTs from the 2nd trimester. The preventive treatment includes minimum 3 doses of SP as recommended by WHO, the current IPTp coverage is estimated to be 60% (WHO 2013), and the use of LLITNs which estimated coverage is 70%. From the establishment of these policies, it has been observed a decrease in cases of MiP, anaemia during pregnancy and low birthweight babies. Challenges include the difficulties of funding for Gabon being an upper middle income country, but also the sustainability of current strategies and funding partnerships (CNAMGS and private sector). Other challenges are the allocation of human resources in regions that are most in need particularly remote areas, and the appropriate training of personnel.

Future: financial and technical support to change policy, cross-country collaborations e.g. for monitoring insecticide resistance and for changing insecticides.

Dr Adeothy Adictou-Lai: Deputy Coordinator National Program for the Fight Against Malaria, Benin

Policy decision making for MiP is led by 'le Direction de la Santé Mère – Enfant' (Maternal and Child health, Family planning and adolescent health; Nutrition) in collaboration with other programmes with interventions in mothers and infants including DNSP (Community health, malaria [PNLP], PNLS, PNT), ANV-SSP and DSIO. GTT PEC and prevention of malaria on pregnancy meets quarterly (PNLP, DSME, PTF, training institutions, Hospitals, and MS directorates).

National Policy documents on MiP (Directives PNLP élaborées avec toutes les parties prenantes dont la DSME) include the: Plan stratégique 2014 – 2018; Directives nationales de CPN-Recentrée et Traitement Préventif Intermittent (at least 3 doses of IPTp-SP for all pregnant women); Directives nationales de prise en charge et de prevention; Directives de CPN.

Coverage with ANC and ITNs is high (98% and 80% in 2015, respectively) however coverage with at least two doses of IPTp-SP by comparison is only 49% (3 doses not captured until 2016) (figure 3). While all staff had been trained in 2008 followed by continuous training of new staff, training had to be resumed in 2016 after the change of the country's policy in 2013 and to date 970 service providers have been retrained. Still problems with implementing IPTp3, finance needed for reporting.

A pilot of community delivery of IPTp in two areas improved coverage of two or more doses in targeted areas but they need to expand coverage.

Experiences: Initiative of free care of malaria in pregnancy since 2012 to contribute to the early management even of the most deprived. In order to ensure the quality of medicines, various collaborations have been set up (DPMED, customs, pharmacists' order, Ministries of the Interior). Involvement of the faith and private sector with training on guidelines, follow-up.

Collaboration with training institutes for the updating of training curricula and definition of research topics and the availability of research results. Research has helped to forward program. Need to reinvigorate this collaboration.

Recommendation: don't change frequently, because that is difficult. Needs funding to update tools.

Comments:

Where IPTp is delivered at community level, how do they assess gestational age at the community level? The first dose is given at the health centre and second dose can be in community, i.e. if the first dose is given at the health centre, that is where they assess gestational age. Gestational age assessment is not done at the community level.

Auditing of maternal deaths in Benin, what is the outcome? Benin is in the process of involving everyone in the community to find out why a woman died and what can be done to prevent in the future.

Indicateurs	2001	2006	2012	2015	Observation
		EDS		MIS	Amélioration des niveaux des indicateurs même si les cibles ne sont pas forcément attentes (TPI)
% femmes enceintes ayant dormi sous MIILD la nuit précédant l'enquête	-	19,6%	71%	79,9%	
% femmes enceintes ayant reçu deux ou plus de doses de TPI pendant la grossesse	NA	3%	25%	48,8%	
			SNIGS		
Couverture en CPN	90%	91%	101%	98,4%	

Dr Yacouba Savadogo: Coordinator National Program for the Fight Against Malaria, Burkina Faso

Policy structure: In Burkina, MiP policy is made by the MOH, working through the Direction of Family and Health (DSF) in collaboration with the National Malaria Control Program (NMCP) which provide the technical support. The guidelines used for MiP are those proposed by the NMCP. These guidelines provide information on MiP case definition, classification of clinical forms, case management and malaria prevention during pregnancy and infancy.

Apart from that, there are also ANC guidelines based on the WHO recommendations. This includes a minimum of 4 contacts with a monthly dose of IPTp-SP starting at 16 weeks up to delivery. The case management of MiP is based on Quinine in the first trimester and ACTs starting at 16 weeks.

The data provided through the 2016 health information system and coverage indicate that out of 9,362,478 cases of uncomplicated malaria reported in Burkina Faso, there were a total of 677,329 pregnant women. Out of 442,402 severe malaria cases reported with a case fatality rate of 0.9, there were 38,628 pregnant women with a case fatality rate of 0.2. The number of pregnant women covered for IPTp –SP for ANC1, 2 and 3 were 850,820, 580,212 and 397,184 respectively, which corresponds to a coverage of 68.3% for IPTp-SP1 and 46.7% for IPTp-SP2. The information on bednets coverage was not available.

Experience and key challenges have been: (a)- the need to provide antenatal care focused on education on MiP, (b)- the need to educate pregnant women on the use of bednets, (c)- the difficulty to supervised the IPTp-SP drug intake, (d)- stock-out in the drug procurement and supply. Other challenges are how to improve the coverage of IPTp-SP3, how to ensure the health staff compliance with WHO guidelines of starting IPTp-SP at 13 weeks of pregnancy, how to implement the new strategy of the IPTp-SP at community level using community health workers.

The lessons learnt is that the supervised IPTp-SP drug intake could allow the right numbering of pregnant women who have actually taken the drug but it remains a challenge for the increase of the IPTp-SP coverage. Other lesson learnt is the absolute need to ensure a regular supply of SP.

Comments

There are problems with collating data from ANC registers into reports. A review of ANC systems is needed e.g. in Mali all women get a registration number, and visit details are entered into a longitudinal register so that they can trace pregnant women from the first ANC visit to delivery on one single page.

Mr Bala Kandeh: Programme Manager, National Malaria Control Programme, The Gambia

MIP policy was informed by consultation and participatory with a diverse group of stakeholders, including government officials, civil society representatives, international technical experts and local implementing partners. MIP has been rollout across the whole country since 2006 and is fully integrated into RCH services; a MIP module has been integrated into the curricula of Nurse training institutions and a critical mass of health workers in public and private sector trained in MIP.

The National malaria policy and strategic plan includes the updated IPTp guidelines, recommending all pregnant women (except where SP is contraindicated) should receive 4 doses of SP under Directly Observed Therapy (DOT) at regular scheduled clinic visits after quickening (i.e. 16 weeks of gestation) at intervals of one month, in public and private health facilities. This is the same as in the Reproduction and Child health guidelines. There is high level of attendance at RCH clinics by pregnant women across the country.

Coverage: Since 2015 the Gambia has captured 3rd and 4th doses of IPTp in HMIS however coverage with 3rd and 4th doses is very low (see figure 4).

Main challenges are: MIP services are not delivered by some private clinics; the linkage with malaria and HIV prevention is not featured in the malaria policy; poor quality of MIP data (longitudinal registers mean nurses need flip backwards and forwards to record subsequent doses of SP); and late ANC booking by pregnant women and high dropout rate for focussed ANC.

Key lessons are the importance of integrating MiP indicators into the HMIS system, the rollout and training of health providers, and an uninterrupted commodity supply for MiPc

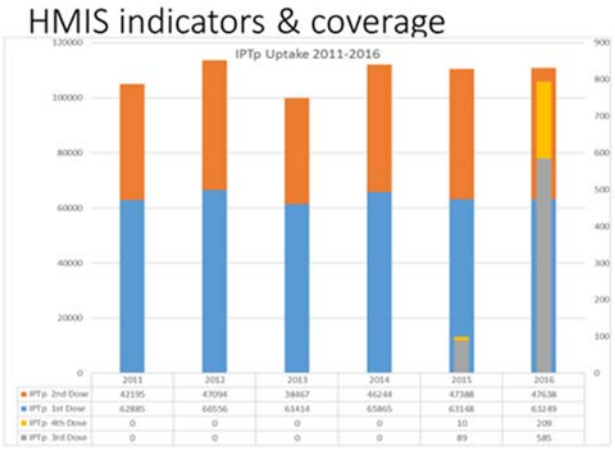


Figure 4

Discussion

What can we do to improve coverage on sp2 and Sp3? And to improve early attendance? In Mali and Togo, ANC services are provided free of charge.

Is there another platform to increase IPTp? In some countries community based delivery of IPTp has been tried. Allows dot to be practiced.

What is your experience with DOT? The SP is often kept in the pharmacy and not in the ANC, and this may hinder provision of SP by DOT. Mothers often don't know what IPTp is, and they may not be able to say they had it during the surveys. Some women are suspicious about IPTp.

IPTp coverage indictors. In some communities, there is no local translation of IPTp, which will affect the accuracy of DHS survey data.

12. Recommendations on Malaria in Pregnancy by National malaria and RH Programme

1. Adequate funding to be provided to programmes to support the rolling out of results from studies e.g. to convey series of technical WG meetings and print new guidelines for all stakeholders.
2. Technical working groups on MiP should be established to include all stakeholders to ensure proper coordination.
3. Increase support for BCC activities at all levels to increase the uptake of IPTp:
    A. Community (the involvement of men)
    B. Health facilities
    C. Encourage countries to provide ANC services, free of charge
    D. Conduct operational research with social anthropologists to assessing cultural and social barriers leading to low ANC service attendance
4. Data capturing should be improved:
    A. HMIS system e.g. financial support to procure enough data capturing tools to replace out dated ones
    B. establish mandatory MOU between private sector and MoH
5. Mobilization of funds for training of health workers focused on FANC
6. To be prepared for conducting operational research on the pharmacovigilance of artemisinin. base combination therapy use in first trimester all the countries.
7. To conduct research comparing ACT versus Quinine in the first trimester after pregnancy use of ACT in the first trimester is release in selected countries (through sponsorship of global fund).
8. To regularly monitor SP resistance using molecular markers and to continuously assess bottlenecks of IPTp uptake and ANC service use.
9. Initiate IPTp at 13 weeks' gestation:
    A. Start if gestational age is confirmed by ECHOGRAPHY
    B. If no confirmation, start at 16 weeks or when first fetal movement is felt
10. New WHO recommendation for ANC:
    A. Countries to be prepared how to match new ANC recommendation and IPTp

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TERMS OF REFERENCE FOR THE ECOWAS NATIONAL CONTROL MALARIA MANAGERS REVIEW MEETING ORGANIZED BY THE WEST AFRICA HEALTH ORGANIZATION (WAHO)

I- Context and Justification

1. The recent 2016 global malaria report highlights a number of progress in malaria control, particularly in sub-Saharan Africa which ECOWAS member States are part of. Despite this progress, the ECOWAS region continues to bear the heaviest burden of malaria. According to the report, the access to the disease reduction tools grows rapidly in many countries for populations those in need. Children are particularly vulnerable, representing over two-thirds of all deaths caused by malaria in the region.

2. In 2015 it was estimated that 92% of malaria deaths have been observed in the Africa region, indeed, it is estimated that 303 000 (165, 000-450,000) malaria-related deaths occurring among children under 5 years, which is equivalent to 70 % of the total (WHO 2016 report). In the ECOWAS region, five countries, namely Burkina Faso, Ghana, Côte d'Ivoire, Niger and Nigeria remain highly malaria endemic and malaria remains the first cause of death in children every two minutes. However, progress has been made and the number of children dying of malaria has decreased by about 29% from 2010 to 2015 due to malaria control strategies adopted by the governments and the introduction of ''Seasonal Malaria chemoprevention'' (SMC) in countries fitting into eligibility criteria set by WHO, and the adoption of a "multi sectorality" approach in disease control. The gains deriving from this progress are threatened by the rapid development and spread of malaria vector resistance to insecticides resistance and even the progressive appearance of resistance to antimalarial drugs

3. The malaria vaccine (RTS, S), introduced by a WHO pilot project in the ECOWAS region, showed partial (50%) protection against malaria in young children; It will be evaluated as a complementary tool to the arsenal of measures recommended by WHO for the prevention, diagnosis and treatment of malaria

4. One year back, West Africa ECOWAS member States Malaria Control Programs Coordinators and their partners met in Bamako in 2016 under the leadership of WAHO to review progress and plan. This review meeting has shown that countries made progress in the planning and implementation of annual work plans with the support of their partners. However, there is still some gaps to bridge if we want to sustain the gains and move towards the elimination agenda.

5. All countries in the region are at different levels of implementation of the strategies. It was clear that there are still many areas in country workplans that require technical support to move forward. These areas include vector control, malaria case management, communication for behaviour change, monitoring and evaluation, and program management. Partners were encouraged to identify areas where they can provide support and discuss with concerned countries on the operationalization of their support.

6. The progress made in reducing the incidence and mortality of malaria between 2000 and 2015 was made possible by improved planning through regional technical assistance on one hand and on another by increasing funding availability and access to malaria control and elimination programs. It then clearly appears, that further progress in malaria reduction depends on increased investment in malaria control programs.

7. The ECOWAS member States Malaria Control Programs review meeting to be held in Lomé/ Togo 04th - 07th April 2017, which will take place in a context where countries are required to prepare their submissions to the Global Funds to fight Aids, Tuberculosis and malaria for the period 2018- 2020 will facilitate peer to peer learning and serve countries negotiations with the Global Fund. This meeting will also be an opportunity for countries to improve their planning and reach a regional consensus in the implementation of malaria control activities articulated in ECOWAS Regional Strategic plan for malaria control and elimination

II Meeting Objectives

- Review country progress in implementing agreed upon action plans during the first quarter: Jan-Mar 2017 (peer review)
- Review partner's interventions in support to countries for the first quarter 2017 and identify country Technical Assistance for the rest of the year
- Review progress in the implementation of the Partners' interventions including the Global Fund, PMI, IDB, and WB. (Disbursement Status vs allocations, implementation status including bottlenecks ...)
- Review Global Fund submission and grant making processes
- Based on the financial and programmatic gaps analysis, evaluate funding opportunities including domestic funding for ECOWAS member States to assist with resources mobilization plans
- Assess insecticides resistance status in the region and country response strategies to address it
- Evaluate malaria control and prevention for target groups such as pregnant women and under five children (Malaria in Pregnancy and Seasonal Malaria Chemoprevention)

III Expected outcomes

- Progress made by countries in the work plans implementation is reviewed (peer review) challenges are identified and adjustments proposed.
- Countries technical assistance needs and potential partners to deliver this technical assistance are identified with timelines.
- An update on the status of resistance to the various formulations of insecticides used in West Africa for Indoor Residual Spraying (IRD) as well as country plans to address insecticide resistance is made.
- Participants are updated on donor interventions in support to countries efforts as well as countries programmatic and financial gaps analysis.
- Participants are updated on new initiatives and cross-border approaches being implemented as well as malaria control interventions tailored for targeted groups (Pregnant women and U5 children).
- A discussion forum on good practices in malaria control is organized and experiences are shared.

IV Methodology

Presentations in plenary sessions followed by discussions, round tables.

V Date and venue

04th - 07th April 2017, Lomé - Togo.

VI Participants

The West Africa Health Organization: Countries

- National Malaria Control Programs Managers (NMCPs) of the 15 ECOWASCountries
- Monitoring and Evaluation Officer of the 15 ECOWAS member States NMCPs
- Reproductive Health Officers (invited by MiP : Malaria in Pregnancy Consortium)

PARTNERS

- WHO
- UNICEF
- RBM (WARN)
- Other Partners including Private Sector

Meeting Agenda

Thursday 8th & Friday 9th April 2017

Thursday 8th April 2017

Special session on Malaria in pregnancy Intermittent Preventive Treatment in West Africa

Moderator: Gabon and Togo
Rapporteur: Gabon and Togo
Timing: 14:00-17:30

Session specific objectives

1. To share research results from recent clinical trials and studies on the safety and efficacy of drugs to treat and prevent malaria during pregnancy in sub-Saharan Africa
2. To discuss the involvement of research findings in national malaria and reproductive health programs, donors and technical partners of the countries involved in the trials - Benin, Burkina Faso, Gabon, Gambia, Ghana and Mali and other countries in the region
3. To learn from the national malaria control program and the reproductive health service, the challenges of changing and implementing malaria policy during pregnancy in the context of prenatal consultation.
4. To Briefly review the type of technical support and materials needed by countries to implement policy changes based on research findings

14:00-14:15 Overall view and objectives on Malaria in Pregnancy (MiP) session Jenny Hill, Liverpool School of Tropical Medicine (LSTM), UK

14:15-14-45 The burden of Malaria in pregnancy in West Africa Patrick Walker, Imperial College London, UK

Session 1 – Use of ACTs for malaria treatment during all trimesters of pregnancy

14:45-15:15 Efficacy and safety of four regimes of ACTs for clinical malaria treatment at the 2nd and 3rd trimester of pregnancy in Africa: Halidou Tinto, Clinical Research Unit of Nanoro (CRUN), Burkina Faso

15-15-15:45 Safety of ACTs and quinine in early pregnancy in Africa : a study of meta- analysis: Halidou Tinto, CRUN, Burkina Faso

Session 2 – IPTp using 2 vs 3 or more doses of SP and implementation problems

15:45-16:15 Effectiveness and cost-efficiency (cost effectiveness) of 2 vs 3 or more doses of SP in IPTp. Kassoum Kayentao, Malaria Research and Training Centre (MRTC), Mali

16:15-16:30 Tea Break

Session 3 –Implication of current policies

15:45-16:15 Experiences of implementing current MiP policies – National Programme Perspectives

Friday 7th April 2017

Special session on malaria in pregnancy prevention and treatment

CO-CHAIRS: Halidou Tinto + Kassoum Kayentao

Session 4 – IPTp medications options and approaches to Intermittent Testing and Treatment (ITT)

08:30-09:00 SP resistance impact on IPTp efficacy – SP in sub-Saharan Africa (Annemieke van Eijk, LSTM, UK)

09:00-09:45 Drugs or alternative strategies for SP replacement in IPTp Mwayi Madanitsa, College of-Medicine, Malawi

09:45-10:15 Lessons learned from clinical trials conducted in Benin, Gabon, Kenya, Mozambique and Tanzania in HIV infected women. Raquel Gonzalez, IS Global, Spain

10:15-10:45 Acceptability of users and service providers over drugs options for IPTp and ITT in trial conditions in Ghana, Malawi and Kenya: Jayne Webster, London School of Hygiene & Tropical Medicine, UK

Coffee Break: 10:45-11:15

Session 5 – Implications for national policies and programmes

11:15-12:15 Experiences of implementing current MiP policies – National Programme Perspective

12:15-12-30 MEETING SUMMARY & RECOMMENDATIONS

1. Programs implication & Technical Assistance needed to support the implementation of WHO recommendations
2. Research priorities

12:30-13:30 Lunch / end of session

13:30-14:30 Meeting Closing Ceremony

- Meeting recommendations by NMCP of the country holding ECOWAS Presidency
- Speech of WHO representative in the Togo (tbc)
- Speech of WARN Co-Chair
- Speech of WHO Director, General
- Closing Speech of the Togo Minister of Health

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