Knowledge and Adherence to the National Guidelines for Malaria Case Management in Pregnancy among Healthcare Providers and Drug Outlet Dispensers in Rural, Western Kenya
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Introduction

• In line with World Health Organization (WHO) recommendations, the Kenya Ministry of Health (MoH) recommends that pregnant women;
  - Use long-lasting insecticidal nets (LLINs)
  - Receive intermittent preventive treatment in pregnancy (IPTp) with sulphadoxine-pyrimethamine (SP)
  - Receive prompt and effective malaria diagnosis and treatment with a safe drug
Correct Case Management of Malaria in Pregnancy

• Appropriate malaria diagnosis
  – Rapid diagnostic test (RDT)
  – Blood slide microscopy

• Adequate pregnancy assessment
  – Last Menstrual Period/gestational inquiry
  – Pregnancy test

• Appropriate Treatment
  – Correct drug prescribed for pregnancy status
  – Correct drug dosage and regimen instructions
Treatment Guidelines

• Artemether-lumefantrine as 1\textsuperscript{st}-line treatment
  – Non-pregnant women
  – women in 2\textsuperscript{nd}/3\textsuperscript{rd} trimester

• Quinine as 1\textsuperscript{st}-line treatment
  – Women in 1\textsuperscript{st} trimester
  – 3 tablets, 2 times a day, for a full 7-days
  – AL or DP may be used in the event of treatment failure or quinine stock-out

• Sulphadoxine-pyrimethamine
  – Solely for intermittent preventive therapy in pregnancy (IPTp) in 2\textsuperscript{nd} trimester or later
  – Never to be used as treatment for acute malaria
Data on MiP Management

• Limited data exists on healthcare provider adherence to case management guidelines for MiP
• A systematic review and meta-analysis of global MiP case management in 2014 reported that healthcare providers followed pregnancy specific treatment guidelines in 28% of first trimester versus 72% in other trimesters
• In Uganda, 70% of women received a contraindicated antimalarial during first trimester pregnancy and less than 6% received quinine
• In Tanzania, 43% of drug dispensers in registered pharmacies offered AL regardless of gestational age and only 20% knew that AL was contraindicated during first trimester
Adherence Study in Western Kenya

• We conducted a cross-sectional study in 51 health facilities (HF) and a randomly-selected sample of 39 drug outlets (DO) in the KEMRI/CDC Health and Demographic Surveillance System (HDSS) area in western Kenya

• Study Period
  September to November 2013

• Study Areas
  Siaya County HDSS area
  - Bondo - 6 Health Facilities
  - Gem - 19 Health Facilities, 13 Drug Outlets
  - Rarieda - 9 Health Facilities, 10 Drug Outlets
  - Siaya - 16 Health Facilities, 18 Drug Outlets
Key Findings

• Malaria Diagnostics:
  – 77% of women diagnostically tested (via RDT or microscopy) in health facilities
  – 9% of simulated clients in drug outlets offered an RDT or asked about previous testing

• Pregnancy Assessment:
  – 43% of not visibly pregnant women assessed for pregnancy in health facilities
  – 7% of the female simulated clients in drug outlets assessed without being prompted
Key Findings

Treatment & Dosage

Prescription of the correct drug for pregnancy trimester at the correct dosage was observed in 66% of all cases in health facilities and 40% in drug outlets

– 1\textsuperscript{st} trimester prescription
  • Correct practice: 32% in health facilities and 0% in drug outlets
  • Correct knowledge: 56% of HF providers and 0% of DO dispensers

– 2\textsuperscript{nd}/3\textsuperscript{rd} trimester prescription
  • Correct practice: 65% in health facilities and 38% in drug outlets
  • Correct knowledge: 87% of HF providers and 39% of DO dispensers
Key Research Findings

Treatment & Dosage

• Exposure to AL in 1\textsuperscript{st} trimester
  – 16\% of cases in health facilities
  – 51\% of cases in drug outlets
  – none were a result of quinine stock-out.

• SP prescribed for treatment of acute malaria
  – 3\% of cases in health facilities
  – 18\% of simulations in drug outlets

• Inadequate quinine dosage
  – > 70\% health facility patients
  – quinine was never prescribed in drug outlets
Implications

• Failure to assess for possible pregnancy
  – Potential inadvertent exposure to AL in early pregnancy

• AL prescription in 1st trimester
  – Potential harm to the fetus

• Prescription of SP as treatment or inadequate dosage of quinine
  – Treatment failure and malaria relapse
    • Adverse consequences to the mother and fetus
    • Emerging drug resistance
Conclusions

• Overall, our study highlighted significant knowledge inadequacies and incorrect prescribing practices in the treatment of MIP

• Particularly concerning is the prescription of contraindicated medications in the first trimester

• These inadequacies should be addressed through comprehensive trainings and increased supportive supervision
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