

Trends in ITN, IPTp-SP usage and malaria prevalence and anaemia in pregnant women on Bioko Island, Equatorial Guinea

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The World Health Organization (WHO) recommends and emphasizes the use of insecticide treated bednets (ITNs) and intermittent preventive treatment (IPT) for all pregnant women in areas of stable transmission of *P. falciparum* malaria. The Bioko Island Malaria Control Project (BIMCP) in partnership with the Ministry of Health and Social Welfare of Equatorial Guinea aims at increasing the proportion of pregnant women sleeping under ITNs and receiving IPT with Sulphadoxine-pyramethamine (SP). This study examined the coverage of these interventions among pregnant women on Bioko Island and the optimal protection they confer against malaria and anaemia. Long-lasting insecticidal nets (LLINs) are distributed to pregnant women at public health facilities during antenatal care visits. The first dose of IPT-SP is administered through directly observed therapy (DOT) during the second trimester of gestation. Malaria education is also provided to women during antenatal care visits. The BIMCP conducts annual cross-sectional Malaria Indicator Surveys (MIS) on Bioko Island to determine malaria prevalence and anaemia. In 2014, the number of pregnant women who slept under ITNs was 19.3%. This increased to 53.5% in 2015 following a mass distribution campaign, but later dropped to 36.8% in 2016. The percentage of pregnant women who received at least one dose of IPT-SP during their pregnancy remained stable from 2014 to 2016 (79.8% in 2014, 73.6% in 2015 and 73.4% in 2016). However, 22.7% took three or more doses in 2014. This increased to 37.2% in 2015 and more than doubled to 64.7% in 2016. *Plasmodium falciparum* parasitemia among pregnant women was 11.5% in 2014, which dropped to 10.5% in 2015 and further to 5.2% in 2016. Moderate/severe anaemia among women was 3.2% in 2014, 3.4% in 2015 and 1.5% in 2016. The substantial increases in the consumption of three or more doses of IPT-SP during pregnancy could have contributed to the reduction of *P. falciparum* parasitemia and moderate/severe anaemia among pregnant women on Bioko Island.

ABSTRACT

Background

The WHO recommends and emphasizes the use of insecticide treated bed nets (ITNs) and intermittent preventive treatment (IPT) for all pregnant women in areas of stable transmission of *P. falciparum* malaria (WHO, 2018). However, IPT coverage among pregnant women in Africa is generally low (WHO, 2018). Since 2004, the Bioko Island Malaria Control Project (BIMCP) implements integrated malaria control using the following interventions: Vector control using through larviciding, bed nets and spraying, case management, behavior change communication (BCC), and targeted preventative interventions for pregnant women. In particular, the aim of preventative interventions for pregnant women is to ensure that women receive three or more doses of IPT and LLINs during pregnancy. The intervention is managed through established government run health clinics through out the catchment area.

Objective

We examine the coverage of interventions targeting pregnant women on Bioko Island and the optimal protection they confer against malaria during pregnancy.

RESULTS

- The percentage of pregnant women who received at least one dose of IPTp during their pregnancy between 2014 and 2017 was 73.4% to 87.6% (Fig. 5).
- However, between 22.7% to 64.7% received at least three doses during the same period.
- In 2014, the number of pregnant women who slept under ITNs was 19.3%. This increased to 53.5% in 2015 following a mass distribution campaign, but later dropped to 36.8% in 2016, rising again to 51.9% in 2017.
- Plasmodium falciparum* prevalence among pregnant women was 11.5% in 2014, which dropped to 10.5% in 2015 and further to 5.2% in 2016 but increased slightly in 2017 (Fig.6).

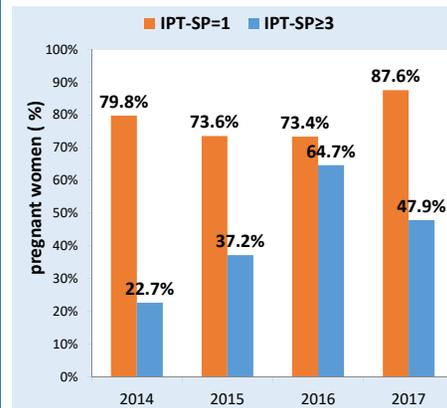


Fig.5. Pregnant women receiving one or three or more doses of IPT

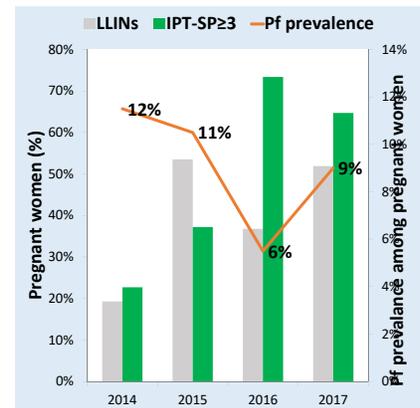


Fig.6. Malaria prevalence among Pregnant women receiving three or more doses of IPT and LLINs

DISCUSSION

- Equatorial Guinea is among the 36 African countries that adopted the revised WHO policy on IPTp.
- Since 2014, the number of pregnant women receiving at least one dose of IPTp remained relatively high at an average of about 78.6%.
- However, those receiving three or more doses is significantly lower at an average of 43.1%.
- WHO reports very low progress in adherence to this policy (WHO, 2018). In 2016, only 19% of eligible pregnant women living in malaria zones in Africa received 3 or more doses of IPTp, compared with 18% in 2015 and 13% in 2014.
- The trend in Pf prevalence amongst pregnant women showed a reduction in prevalence when 73.4% of the pregnant women took three or more doses of IPTp.

Conclusion

The substantial increase in the consumption of 3 or more doses of IPTp during pregnancy might have resulted in the reduction of falciparum malaria prevalence among pregnant women in Bioko.

METHODS

Catchment Area

Bioko Island is home to the capital of republic of Equatorial Guinea. The Island is located 32 km off the coast of Cameroon with a population of ~335,000 people. Malaria transmission occurs throughout the year.

Distribution of LLINs and IPTp at Antenatal Clinics

Long-lasting insecticidal nets (LLINs) are distributed to pregnant women for free at public health facilities during antenatal care visits (Fig. 4). The first dose of IPTp (Fig. 2.) is administered through directly observed therapy (DOT) during the second trimester of gestation (Fig. 3). Malaria education is also provided to women during antenatal care visits (Fig 1).

BIMCP Malaria Indicator Survey (MIS)

The BIMCP conducts an annual cross-sectional MIS on Bioko Island that determines malaria parasite prevalence in the general population including pregnant women. The MIS has been conducted on Bioko Island since 2004. Amongst the questions asked to pregnant women who attended antenatal clinics are the following;

- Did you take, at the antenatal consultation, the recommended drug to prevent you from getting malaria?
- How many times did you take SP/Fansidar during this pregnancy?
- Why did you not take medicine during your pregnancy?
- Did you receive a mosquito net during any of your antenatal care visits?



Fig. 1. Pregnant women attending antenatal clinic



Fig. 2. One dose of SP (Fansidar)



Fig. 3. Direct observed therapy



Fig. 4. Pregnant woman receives LLIN at antenatal visit

REFERENCES

WHO. Intermittent preventive treatment in pregnancy (IPTp) [Internet]. WHO. World Health Organization; 2018 . last accessed in October. Available from: http://www.who.int/malaria/areas/preventive_therapies/pregnancy/en/

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