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Assessment of the prevention of mother-to-child transmission of HIV services effectiveness in the Rorya District, Tanzania

Research Article

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Abstract

In Tanzania, a country with a national mother-to-child HIV transmission (MTCT) rate of 9%, the provision of services to prevent the spread of the virus during pregnancy and breastfeeding constitutes a crucial activity. The primary objective of this study was to assess the effectiveness of the prevention of mother to child HIV transmission (PMTCT) services in the Rorya District (rural northwestern Tanzania), after the implementation of the 2013 Tanzania National Guidelines for PMTCT. The study revealed that additional efforts are needed to completely eliminate the MTCT in the area. There is a need to promote early HIV testing and antiretroviral therapy adherence in pregnant women, as well as the retention of infants at risk of HIV infection along the PMTCT continuum of care.

Introduction

In 2016, 1.8 million individuals became newly infected with HIV, including 160,000 children. Most of these children are living in Sub-Saharan Africa and become infected by their HIV-positive mothers during pregnancy, childbirth or breastfeeding.[1] In the absence of any intervention, HIV is transmitted from mother infected with the virus to their infants in 15 to 45% of cases.[2] However, with effective interventions this rate can be reduced to below 5%.[2]

The latest WHO guidelines on prevention of mother-to-child HIV transmission (PMTCT), published in 2012, places pregnant HIV+ women on lifelong antiretroviral therapy (ART) regardless of clinical or immunological stage.[3] In September 2013, the latest WHO recommendations on PMTCT were introduced in all the reproductive and child health facilities in Tanzania through the 2013 Tanzania National Guidelines for PMTCT, leading to a decline in the mother-to-child HIV transmission (MTCT) rate at the national level.[4,5] Nevertheless, MTCT still accounted for 1 of every 5 new cases of HIV infection in 2014. These numbers are mainly due to the lack of adherence and retention to the PMTCT services cascade by HIV+ mothers and their newborns.[4]

The current study was intended to gain insight into the current PMTCT service provision in the Rorya District. For this purpose, we explored the PMTCT services provided by the Shirati Rorya District's Hospital facilities, community health

workers (CHWs) and peer counsellors. Finally, we analyzed the MTCT incidence at Shirati Hospital during the last four years and at the district level during 2017 to gain insight into the effectiveness of the current PMTCT system.

Methods

This cross-sectional study was conducted in the Rorya District, inhabited by 265,000 people[6] and with an HIV prevalence in the population aged 15 to 49 years of 4.5%.[7]

In order to define the PMTCT service cascade within the Rorya District, we performed a series of surveys to the main providers and organizers of the services at Shirati Hospital.

In addition, we collected data from hospital records in order to gain insight into the MTCT incidence in the Shirati Hospital and the Rorya District. The data were analyzed using IBM SPSS version 24.

Results

We reported that PMTCT services in Shirati are provided by the Reproductive and Child Health (RCH) clinic and PMTCT office at Shirati Hospital, CHWs and peer counsellors. The providers are adhered to the national PMTCT guideline,[5] which follows the WHO recommendations regarding PMTCT.[2]

The RCH clinic provides pre-HIV testing counselling to all pregnant women visiting the clinic for the first time. Pre-HIV testing counselling and support is also provided by CHWs. If the women decide to be tested for HIV, screening and confirmatory tests are performed at the RCH clinic, where in case of positive results, women are provided with first-line ART. Peer counsellors are in charge of ensuring the visits for follow-up.

The RCH clinic also provides antiretroviral drugs to neonates at HIV risk until they are six weeks of age and performs two HIV tests: one at four-six weeks of age and one at 18 months of age or at the end of breastfeeding. Follow-up is provided until the infants are 5 years old. All HIV+ infants are referred to the Care and Treatment Clinic (CTC) after diagnosis.

After collecting data from the Shirati Hospital records, we found that HIV status at 4-6 weeks of age was unknown for more than the 20% of the registered infants at HIV infection risk in 2016 and 2017. In the case of the HIV testing at 18 months of age or at end of breastfeeding, the lack of information in the registers was more accentuated, with more than 50% of the infants without a registered HIV status at this stage in 2015 (Figure 1; 8: p.17).

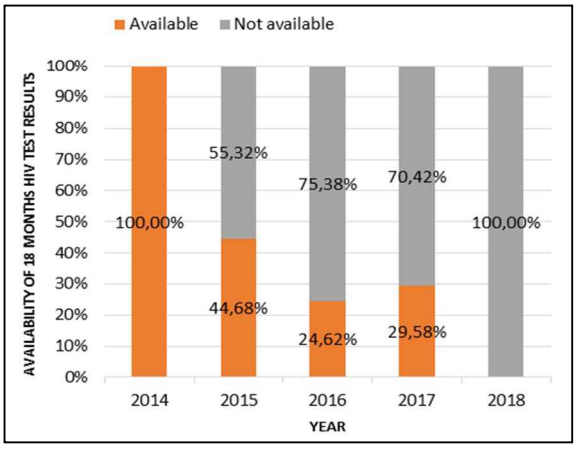

Figure 1. % of availability of HIV test results for infants at HIV infection risk at 18 months of age/after end of breastfeeding in RCH/PMTCT records (8: p.17).

We reported a gradual decrease in the MTCT rate in the period September 2014-February 2018, from 6.7% in 2014 to 0% in the two first months of 2018 (Figure 2; 8: p18). A total of 14 new MTCT cases were detected in this period. Two infants died before being referred to the CTC.

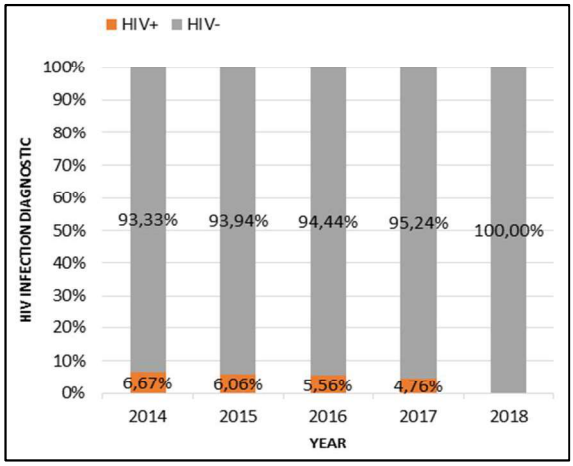

Figure 2. % of HIV+ infants, tested at 4 weeks and/or 18 months/after end of breastfeeding at RCH/PMTCT (8: p:18).

At the District level, of the 30 health facilities analyzed, those with the highest MTCT incidence in 2017 were: Nyanchabakenye Dispensary, Baraki Health Center, Rwang'enyi Dispensary and Kowak Hospital, all with an MTCT rate of 16.7%. In

contrast, 60% of the health facilities presented an MTCT rate of 0%. The average MTCT rate (±SD) in the Rorya District in 2017 was 4.1% (±6%), slightly inferior to the 4.8% MTCT rate in the Shirati Hospital.

Discussion

The results of this study demonstrate that the Shirati Hospital integrates the 2013 Tanzania National Guideline for PMTCT by means of the One Stop Clinic model, integrating HIV and maternal, newborn and child health services in the same clinic. We reported a tight interaction between the RCH, CHWs, and peer counsellors.

The adoption of the latest national PMTCT guideline has likely contributed to a sustained decrease in the MTCT rate at Shirati Hospital, lower than the most recent national MTCT rate of 9%.[9]

According to the results obtained in this study, it is recommended that the Shirati Hospital professionals improve the retention in health care of children at HIV infection risk. Peer counsellors should ensure the attendance of HIV+ women and their infants to the RCH monthly appointments until the end of breastfeeding or 18 months of age.

In addition, CHWs should enhance the promotion of early HIV testing among pregnant women to start ART as soon as possible, in order to achieve and sustain the complete elimination of MTCT.

Conclusion

In summary, the 2013 Tanzania National Guideline for PMTCT has been successfully implemented in the Shirati Hospital through an integrated service delivery model. An indicator of the success of this program is the MTCT rate decrease over the last four years in the facilities. Both, the Shirati Hospital and the Rorya District MTCT rates, are around half of the national figure. Nevertheless, more efforts must be done to guarantee the retention in the PMTCT continuum of care of HIV+ pregnant women and infants at HIV risk during pregnancy and after delivery.

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