Evidence For Action
on HIV treatment and care systems

Case Study
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Adherence to prevention of mother to child transmission of HIV interventions: results from operational research

Summary

In Uganda there about 1.2 million deliveries without Prevention of Mother To Child Transmission (PMTCT) interventions annually. About 30,000 infants become HIV-infected each year, and because of limited infant diagnosis and treatment, about half of them die before their 2nd birthday.

The Medical Research Council in Uganda at its rural site in Kyamulibwa sub-county, has been conducting epidemiological studies since 1989 on a general population cohort (GPC). Clinical research in adults and children has been carried out since 1990 and 2002 respectively.

Pregnant women identified through the annual sero surveys in the GPC, local council vital recorders and antenatal clinics at local health centres, were counselled to have an HIV test. HIV positive women were counselled on PMTCT and those who gave informed consent were offered a comprehensive package of interventions which included antenatal care, ARVs for PMTCT or ART for those with CD4 counts < 350, counselling on need to deliver at a health facility and infant feeding options, and their children were enrolled into the children's clinic for early infant diagnosis and follow-up.

Of the 122 HIV-infected women enrolled, 102 were assessed for adherence to the PMTCT regimen. 83 (81%) took some part of the PMTCT regimen, however only 12% of the 67 women on ARVs for prophylaxis and 60% of the 35 women on ART achieved 95% adherence to both mother and child's requirements. 55% of HIV-infected women delivered in a health facility. Four babies (4%) out of 95 tested were HIV-infected at 6 weeks post delivery.

Description of the study & main findings

It is estimated that over 2 million children worldwide were living with HIV by end of 2008. Over 90% of these infections were transmitted from mother to child. The World Health Organisation recommends a 4 pronged approach to PMTCT which includes primary prevention of HIV among women, prevention of unintended pregnancies among HIV-infected women, prevention of HIV transmission from mother to child (ART, safe obstetric practices, counseling and support on infant feeding), and provision of appropriate treatment, care and support to HIV-infected mothers, their infants and family.

HIV positive pregnant women were counselled on PMTCT and those who gave informed consent were enrolled and offered a comprehensive package of interventions which included, antenatal care, ARVs for PMTCT (AZT 300mg starting at 28 of gestation given twice a day, AZT/3TC during labour and for 7 days after giving birth for those with CD4 counts > 350cell/µl, while ART was initiated in those with CD4 counts < 350cells/µl). The baby received AZT 4 mg/kg body weight, twice a day for one week. They were counselled on infant feeding options and to deliver at a health facility. Their children were enrolled into the children's clinic for early infant diagnosis (DNA PCR was done at 6 weeks of age) and follow-up.

122 HIV-infected women enrolled.

> "Of the 102 HIV infected women assessed for adherence to the PMTCT regimen, only 12% of those on prophylaxis and 60% of those on ART achieved 95% adherence to the PMTCT regimen for both mother and infant."

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Of the 102 women assessed for adherence, 12% of the 67 women on ARVs for prophylaxis and 60% of the 35 women on ART achieved 95% adherence to both mother and child's requirements. Adherence was associated with older women, disclosure of HIV status and delivered at health facility. Being on ART dramatically improved adherence aOR 13 (4.4-44.0). 55% of HIV-infected women delivered in a health facility. This was associated with a higher education status, and being single. Four babies (4%) out of 95 tested were HIV-infected at 6 weeks post delivery.

What is the potential impact?

HIV infected women who enrolled into the study were offered PMTCT services and only 4% of the children born to these women acquired HIV. This compares well with the 15-45% of babies who would be infected in the absence of PMTCT interventions. The children were linked into care and early infant diagnosis was performed for 95 children.

The 4 children diagnosed HIV-infected were started on ART and are in active follow-up. Only one child passed away before initiating ART.

Implementing a comprehensive package of PMTCT activities in rural Uganda still poses a great challenge. Although this study was done in a research setting, it still shows that women in rural areas can be offered PMTCT services to reduce vertical transmission of HIV to their infants. This study shows that adherence is a key issue that needs to be addressed for PMTCT services to be effective. It also identifies some key barriers to adhering to the comprehensive package of PMTCT interventions for HIV positive women which can be used to inform policy.

How is this research novel?

Extensive research has been done in the field of PMTCT. However, there is very little information on barriers of implementing PMTCT interventions in rural Africa. This study providence evidence that a comprehensive package of PMTCT interventions can be offered to HIV-infected women in rural areas, however issues of adherence to these interventions need to be addressed for better effectiveness.

What made the research successful?

Intensive community engagement, extensive counselling of women to adhere to ARVs and health facility delivery together with collaboration with local health centres to identify pregnant women and provide antenatal care and skilled attendance at delivery for the women helped to make the research successful. The financial support from both MRC – UK and DFID contributed to the success of the research project.

Who has been involved?

- **MRC/UVRI Uganda Research Unit on AIDS:** Dermot Maher; Henry Barigye; Mary Munyagwa; Jonathan Levin; Stephen Nakibinge; Heiner Grosskurth
- **London School of Hygiene and Tropical Medicine:** Shabbar Jaffar

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Evidence For Action on HIV treatment and care systems

About Evidence for Action

Evidence for Action is an international research consortium with partners in India, Malawi, Uganda, UK and Zambia, examining issues surrounding HIV treatment and care systems.

The research is organised in four key themes:

1. What "package" of HIV treatment and care services should be provided in different settings?
2. What delivery systems should be used in different contexts?
3. How best should HIV treatment and care be integrated into existing health and social systems?
4. How can new knowledge related to the first three questions be rapidly translated into improved policy and programming?

Partners:

International HIV/AIDS Alliance, UK

Lighthouse Trust, Malawi

London School of Hygiene and Tropical Medicine, UK

Medical Research Council Uganda Research Unit on AIDS, Uganda

Medical Research Council Clinical Trials Unit / University College London, UK

National AIDS Research Institute, India

ZAMBART, Zambia

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