Original Article

Study the effects of standardised treatment protocols for opportunistic infection in children living with HIV/AIDS on their clinical profile

Shilpa Yashwant Pawar[1], Sadhana Jagannath Raut[2], Smita Mundada[3], Amol Suryawanshi[4], P S Patil[5]

[1,2,3]Assistant Professor, [4]Associate Professor, Department of Paediatrics, Government Medical College, Aurangabad, Maharashtra, INDIA.
Email: kshirsagar.shilpa1974@gmail.com

Abstract

Introduction: HIV-AIDS is now endemic throughout the world. As in adults, pediatric HIV/AIDS is on rise all over the world. Nearly 25 million people have died world over due to HIV since 1981. **Aims and Objectives:** To Study standardized treatment protocol for opportunistic infections in children living with HIV/AIDS. **Methodology:** This is a Cross-sectional study carried in children living with HIV/AIDS at A.R.T. Centre, government medical college and Hospital, Aurangabad During July to December 2007 .One of the main objectives of this project was to prepare a standard treatment protocol for the Management of Opportunistic Infection in children living with HIV/AIDS. Necessary permission From NACO, MSACS and Parents or Care takers Consent was taken. 280 pediatric patients enrolled and out of these 50 patients are on antiretroviral therapy. **Result:** TB was the most common OI observed in the study group followed by Diarrhea and Acute respiratory infection. There was overall increase in height, Weight and overall increase in CD4 Count after starting the Standard Treatment Protocol in Children with HIV/AIDS. **Conclusion:** There was positive response to the Standard Treatment protocol in the Form of increase in height, weight and overall increase in CD4 Count after starting the Standard Treatment Protocol in Children with HIV/AIDS, So these standard protocols be followed stringently for the better prognosis for opportunistic infections in children living with HIV/AIDS.

Keywords: Opportunistic infections in children living with HIV/AIDS, CD4 Count, NACO, MSACS.

[*]**Address for Correspondence:**
Dr. Shilpa Yashwant Pawar, Assistant Professor, Department of Paediatrics, Government Medical College, Aurangabad, Maharashtra.
Email: kshirsagar.shilpa1974@gmail.com

Received Date: 16/04/2016 Revised Date: 02/05/2016 Accepted Date: 16/06/2016

Access this article online

Quick Response Code:

Website: www.statperson.com

DOI: 18 June 2016

INTRODUCTION

HIV-AIDS is now endemic throughout the world.[1]As in adults, pediatric HIV/AIDS is on rise all over the world. Nearly 25 million people have died world over due to HIV since 1981. It is estimated that currently 38.6 million people live with HIV infection world over of which, 2.3 million i.e. 5.9% are children <15 years of age.[2]Though children represented only 6% of all these as of December 2005, they accounted for 18% of the 3.1 million AIDS deaths in 2005. This is mainly because only 40,000 or 4% of the one million people now on antiretroviral treatment are children. This means that one in every six AIDS death each year is a child and yet children represent less than one of every twenty five persons getting treatment in developing countries today.[3]The epidemiology of HIV disease in children reflects the epidemiology of HIV in women, although this relationship has been profoundly altered by the ability of antiretroviral therapy during pregnancy to prevent transmission from mother to child.[5] Mothers and as a consequence children are the most. The epidemiology of HIV disease in children reflects the epidemiology of HIV in women, although this relationship has been profoundly altered by the ability of antiretroviral therapy during pregnancy to prevent transmission from mother to child.[5]Mothers and as a consequence children are the most. vulnerable population at risk of highest new infections andmorbidity and mortality. In 2005, more than 540000 children vulnerable population at risk of highest new infections and morbidity and mortality. In 2005, more than 540000 children were born with HIV infection transmitted from their infected mothers, 90% of them in sub-Saharan Africa and remaining in Asia, mainly India.[2]Based on the sentinel

How to site this article: Shilpa Yashwant Pawar, Sadhana Jagannath Raut, Smita Mundada, Amol Suryawanshi, P S Patil Study the effects of standardised treatment protocols for opportunistic infection in children living with HIV/AIDS on their clinical profile. *International Journal of Recent Trends in Science and Technology* June 2016; 19(2): 278-281. http://www.statperson.com (accessed 20 June 2016).

surveillance done in ANC clinics and STI clinics across the country, India is divided in to 3 zones of prevalence.
a) High prevalence states (HIV prevalence in ANC mothers>1%) – Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Manipur and Nagaland fall into high prevalence zone with average prevalence in ANC mothers of 1-6%.b) Medium prevalence states : (HIV prevalence in ANC mothers <1% but the same in high risk population in STI clinics > 20%). 2 states Gujarat and West Bengal fall in this zone with average prevalence in ANC mothers of 0.5%.c) Low prevalence states: (HIV prevalence in ANC mothers<1% and that in high risk population in STI clinics <20%). The rest of the states, other than mentioned above, fall in this zone with average prevalence in ANC mothers of 0.2%. 3 The national average of HIV prevalence in ANC mothers is 0.7%.[3]Unlike in adults where more than 90% of the time HIV infection occurs through sexual route, in the developing countries 95% of cases in children occur due to vertical transmission from their infected parents. The risk of mother to child transmission of HIV infection varies from country to country and also within a country depending on the facilities available. This risk of mother to child transmission is 15-30% in non-breast feeding populations, whereas it is 30-45% in countries where breast feeding is a norm.[2,3,4]This is because breast feeding has an additional 5-20% risk of postpartum transmission. At the rate of 0.7%, national average of HIV prevalence in ANC mothers, nearly 1.9 lakh deliveries of the 27 million deliveries occurring in India annually occurs in HIV infected mothers. In India less than 4% of the pregnancies actually avail of the PMTCT/PPTCT services. Out of these, less than 7% of such exposed mother-baby pairs are put on PMTCT regimen of single dose Nevirapine and less than 3.5% of such babies are actually prevented from getting infected from their mothers.[3,6]

MATERIAL AND METHODS

This is a Cross-sectional study carried in children living with HIV/AIDS at A.R.T. Centre, government medical college and Hospital, Aurangabad During July to December 2007. One of the main objectives of this project was to prepare a standard treatment protocol for the Management of Opportunistic Infection in children living with HIV/AIDS. Necessary permission From NACO, MSACS and Parents or Care takers Consent was taken. 280 pediatric patients enrolled and out of these 50 patients are on antiretroviral therapy. These patients are monitored every month at ART Centre At our Centre we provide the facilities like –Registration at ART Centre, Counseling – post-testing and adherence, Routine pre-ART screening for various opportunistic infections, Treatment of these opportunistic infections, Prophylaxis of various infections, CD4 testing for the entire registered patient, Their clinical and immunological staging. Prescribing and disposing antiretroviral therapy to indicated patients. Monitoring these patients on follow-up visit for various side effects of ART or progression of diseases Psychological support and family counseling. Thus we try to provide a comprehensive care all our registered patients. Amongst these are also our pediatric cases in which we try to give them the above mentioned services to decrease the mortality and morbidity due to the disease process. With the guidance from the available guidelines for the treatment of children living HIV/AIDS by NACO/IAP and WHO, MSACS and various other books, a standardized treatment protocols were prepared as Per the Guidelines: I) For diagnosis of HIV infection in children below 18month of age:[9] II) Diagnosis of HIV infection in children above 18 months of age[9,13], III) For clinical staging of pediatric cases[8] IV) For management of Opportunistic Infections in HIV infected Children:[13] common opportunistic infection seen in children with HIV/AIDS and there management.[13,14,15,16,17] VI) Prevention of mother to child transmission of HIV:[4,8,12,14,20]. Recommended ARV prophylaxis to the infant:[15]

RESULT

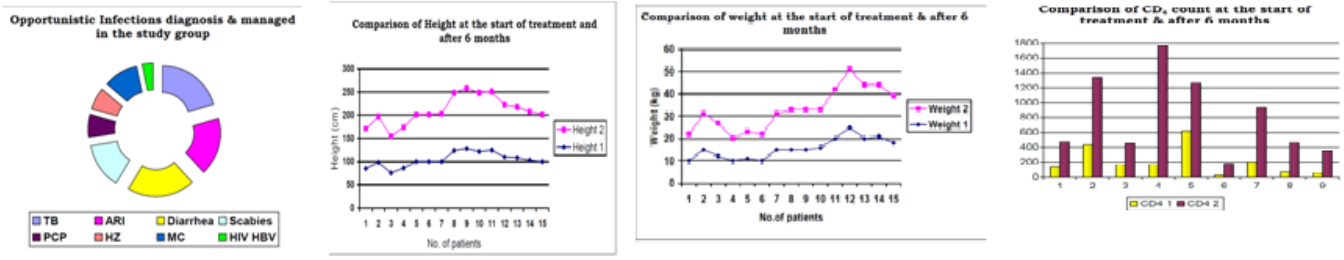

Figure 1: TB was the most common OI observed in the study group followed by Diarrhea and Acute respiratory infection
Figure 2: Graph it is clear that there was overall increase in height after starting the Treatment.
Figure 3: Graph it is clear that there was overall increase in Weight after starting the Treatment
Figure 4: Graph it is clear that there was overall increase in CD4 Count after starting the Treatment

DISCUSSION

From CDC [18]it mentions; the widespread use of potent combination antiretroviral therapy (ART), opportunistic infections (OIs), which have been defined as infections that are more frequent or more severe because of immunosuppression in HIV-infected persons, were the principal cause of morbidity and mortality in this population. In the early 1990s, the use of chemoprophylaxis, immunization, and better strategies for managing acute OIs contributed to improved quality of life and improved survival. However, the widespread use of ART starting in the mid-1990s has had the most profound influence on reducing OI-related mortality in HIV-infected persons in those countries in which these therapies are accessible and affordable. Despite the availability of ART in the United States and other industrialized countries, OIs continue to cause considerable morbidity and mortality for three primary reasons: 1) many patients are unaware of their HIV infection and seek medical care when an OI becomes the initial indicator of their disease; 2) certain patients are aware of their HIV infection, but do not take ART because of psychosocial or economic factors; and 3) certain patients are prescribed ART, but fail to attain adequate virologic and immunologic response because of factors related to adherence, pharmacokinetics, or unexplained biologic factors. Thus, although hospitalizations and deaths have decreased since the implementation of ART, OIs remain a leading cause of morbidity and mortality in HIV-infected persons. Clinicians must be knowledgeable about optimal strategies for prevention and management of OIs to provide comprehensive high-quality care for these patients. Recognizing that the relation between OIs and HIV infection is bidirectional is important. HIV leads to immunosuppression that allows opportunistic pathogens to cause disease in HIV-infected persons. OIs and other coinfections that might be common in HIV-infected persons, such as sexually transmitted infections, can also have adverse effects on the natural history of HIV infection. Certain OIs are associated with reversible increases in circulating viral load, and these increases could lead to accelerated HIV progression or increased transmission of HIV. Thus, although chemoprophylaxis and vaccination directly prevent pathogen-specific morbidity and mortality, they might also contribute to reduced rate of progression of HIV disease. For instance, randomized trials using trimethoprim-sulfamethoxazole (TMP-SMX) have documented that chemoprophylaxis can both decrease OI-related morbidity and improve survival. The survival benefit is likely to be partially attributable to reduced progression of HIV infection. Reduced progression of HIV infection would also indirectly delay or reduce the occurrence of subsequent OIs. In our study we have found that TB was the most common OI observed in the study group followed by Diarrhea and Acute respiratory infection. There was overall increase in height, weight and overall increase in CD4 Count after starting the Standard Treatment Protocol in Children with HIV/AID.

CONCLUSION

There was positive response to the Standard Treatment protocol in the Form of increase in height, Weight and overall increase in CD4 Count after starting the Standard Treatment Protocol in Children with HIV/AIDS, So these standard protocols be followed stringently for the better prognosis for opportunistic infections in children living with HIV/AIDS.

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Source of Support: None Declared
Conflict of Interest: None Declared