ANTI-RETRO VIRAL THERAPY IN INDIA

Satish K. S[1], K. Hanumanthayya[2]

HOW TO CITE THIS ARTICLE:
Satish K. S, K. Hanumanthayya. "Anti-Retro Viral Therapy in India". Journal of Evidence Based Medicine and Healthcare; Volume 1, Issue 7, September 2014; Page: 649-651.

INTRODUCTION:

AIDS was first recognized in the United States in the summer of 1981, when the U.S. Centers for Disease Control and Prevention (CDC) reported the unexplained occurrence of Pneumocystis jiroveci pneumonia in 5 previously healthy homosexual men in Los Angeles and Kaposi's sarcoma with or without P jiroveci pneumonia in 26 previously healthy homosexual men in Los Angeles and New York.

The information flow related to HIV disease is enormous and continues to expand, and it has become almost impossible for the health care generalist to stay abreast of the literature.

Globally, AIDS is the leading cause of the death among people aged 15-59 years old in low income countries. Despite the remarkably rapid scientific advances that have been made in epidemiology, basic science and treatment, today, the HIV pandemic continues to represent one of the world's most urgent public health challenges.

Currently several drugs are available for the treatment of HIV infection and with appropriate medicine it is possible to control the disease and prolong the life to a large extent. Combination of drugs like HAART regimen is used to improve efficacy and delay the development of resistance.

WHO recommends fixed dose combination to improve the compliance. Zidovudine or Tenofovir combined with lamivudine or emtricitabine form the first line drugs. If first line therapy fails, second line drugs are given.

WHO recommended antiretroviral drug regimens		
	Preferred 1st line	Preferred 2nd line
Adults	NVP + 2NRTI	Boosted PI + 2NRTI
In pregnancy	NVP + Lamivudine + AZT	

Occupational Post Exposure Prophylaxis: In health care workers exposed accidentally to HIV infected material, while treating HIV patients, Surgeons while doing surgery on HIV positive patients, Physicians while performing lumbar puncture or tapping pleural fluid, anti-retroviral therapy should be initiated as soon as possible. It is ideal to start ART within first 4 hours, not later than 72 hours.

Basic regimen	AZT 300 mg + Lamivudine 150 mg twice a day for 4 weeks.
Expanded regimen	AZT 300 mg + Lamivudine 150 mg + Lopinavir or Ritonavir 200 mg twice a day for 4 weeks.

Basic regimen is given for simpler and superficial injuries. Expanded regimen is preferred for all cut injuries.

Initial HIV antibody test is done before start of ART, and HIV antibody test is repeated at the end of

45 days, 3 months and 6 months. If HIV test becomes positive, then, full dose ART will be started.

WHO 2010 Guidelines:

When to start: All adolescents and adults including pregnant women with HIV infection and CD4 counts of < 350 cells/mm^3, should start ART, regardless of the presence or absence of clinical symptoms.

Those with severe or advanced clinical disease should start ART irrespective of their CD4 cell count.

What to use in first line therapy:

First line therapy should consist of a Two NRTIs + one NNRTI.

One of the NRTI should be Zidovudine or Tenofovir. Use of Stavudine in the first line regimens should be reduced because of its well-recognized toxicities.

India's first choice

Three drugs are given.

1) Zidovudine or Stavudine
   Plus
2) Lamivudine
   Plus
3) Nevirapine or Efavirenz.

If first line regimen is Stavudine + Lamivudine + Nevirapine, then, reasonable second option is:

Zidovudine + Didanosine + Nelfinavir

Introduction of first line therapy for adults: First 2 weeks – Induction of ART

Zidovudine + Lamivudine + Nevirapine, all 3 drugs are given in the morning.

Zidovudine + Lamivudine, only 2 drugs are given in the night. The reason being, Nevirapine is hepatotoxic, and half the therapeutic dose for 2 weeks will educate the liver to synthesize more enzymes to metabolize the Nevirapine in future.

After 2 weeks all 3 drugs are given in morning and at night also.

If the first line regimen is not effective, second line regimen has to be started.

Second line regimen also consists of 3 drugs. They are Ritonavir boosted protease inhibitors plus 2 NRTIs, one of which should be AZT or TDF based 3 drugs.

Ritonavir enhances the pharmacological action of all other proteases. Hence it is called pharmacological enhancer. 100 mg Ritonavir is added to all other proteases.

Tenofovir or Abacavir
Plus
Didanosine
Plus
Lopinavir/r or Saquinavir/r

Combination therapy of ART drugs:

1) 2 NRTIs + 1 NNRTI
2) 2 NRTIs + 1 PI
3) 2 NRTIs + 2 PIs
4) 3 NRTIs

Among these 4 regimens most inferior regimen is 3 NRTIs regimen. Hence it is not used.

REFERENCES:

1. Koda Kimble & Young's Applied Therapeutics, The Clinical Use of Drugs. 10th ed. 2013.
2. Padmaja Uday kumar Medical Pharmacology, Indian Journal of Pharmacology, Vol.45, No 6, 4th ed, 2013,p.646
3. Rewari B B, Emergencies in HIV medicine, Medicine Update 2010 Vol. 20.
4. National Guidelines on Second line ART for Adults and Adolescents – NACO April 2011.
5. Antony S Fauci, H Clifford Lane, Human Immunodeficiency Virus Disease, Harrison's Infectious Diseases, 2nd ed, 2013.

AUTHORS:

1. Satish K. S.
2. K. Hanumanthayya

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of Dermatology, Kempegowda Institute of Medical Sciences.
2. Professor and HOD, Department of Dermatology, Vydehi Institute of Medical Sciences and Research Centre.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Satish K. S,
Assistant Professor,
Department of Dermatology,
Kempegowda Institute of Medical Sciences.
E-mail: sksgowda4@gmail.com

Date of Submission: 19/08/2014.
Date of Peer Review: 20/08/2014.
Date of Acceptance: 26/08/2014.
Date of Publishing: 06/09/2014.