After major victories were won in controlling many of the classic infectious disease such as syphilis, diphtheria and cholera in 1960's and 1970's, the developed world became complacent with respect to these killers of the past. On the scene, however, emerged AIDS, leads to the destruction of cellular immune response and ultimately death of the individual.

The National Aids Control Organisation 2008 (NACO-2008) estimates put the national adult HIV prevalence in India at approximately 0.34 percent, amounting to between 1.8 and 2.9 million people in 2007. That means 2.31 million people are living with HIV and AIDS. Out of the estimated number of people living with human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome (AIDS), 39 percent (0.9 million) are women and 3.5 percent are children.

The advent of Highly Active Antiretroviral Therapy (HAART) in 1996 heralded a new era in HIV treatment. It has improved the quality of life in HIV-infected individuals on HAART regimen. In addition ART has been shown to decrease the rate of hospitalisation and opportunistic infection in those infected with HIV. However despite more benefits, ART exerts great demand on an individual due to various side-effects and complicated dosage regimen. The main objective of HAART is to reduce the plasma viral loads to undetectable levels. In India as on date 172 ART centres are functioning.

Antiviral Activity

The antiviral approach to HIV-infected is based on some basic facts in the biology of AIDS virus (HIV pathogenesis). HIV is a retrovirus which converts its RNA into DNA for its replication, here it uses an enzyme called “reverse transcriptase”. This enzyme is the weak point at which most antiviral drugs attempt to disrupt the destructive activity of the virus. Therapeutic success depends on the thorough understanding of the pathogenesis of HIV disease and on familiarity with when and how to use the more numerous and more effective drugs available to treat HIV infection. In India, a working knowledge of ART is needed for every nurse interested in managing HIV infection, since Government of India has already introduced ART in high prevalence states.

The authors are: Nursing Tutor, Govt. School of Nursing, Chengalpattu Govt Medical College Hospital, Chengalpattu, (TN); and Clinic Nurse, Tuberculosis Research Centre (ICMR) Chennai, respectively.
**Principles of ART**

1. Limiting the viral replication and protecting injured immune system.
2. Monitoring plasma viral load & CD4 count prior to ART and then every 3-6 months on treatment.
3. In resource-limited setting, ART can be offered to patients with current HIV-related complication & high plasma viral load (>20,000 copies/ml and low CD4 count).
4. The goal of therapy is maximum achievable suppression.
5. Correct combination of effective anti-HIV drugs.
6. Correct dosage of antiretroviral drugs.
7. Women should receive optimal ART irrespective of pregnancy status.
8. ART counselling.

**Classification of Antiretroviral Drugs**

There are five groups of antiretroviral drugs. Each of these groups attacks HIV in a different way.

With the availability of newer antiretrovirals, treatment has moved from monotherapy, bitherapy to triple drug therapy or HAART. Treatment with a cocktail of three (or more) antiretroviral medication is now a standard treatment protocol. The durable suppression of HIV can be achieved only with three drug combination (2NRTI and 1 PI/NRTI). Adherence is essential in initiating and maintaining viral suppression. Interruption of HAART, irregular dosages or missing doses can result in emergence of drug-resistant strains of HIV.

**Baseline Investigation for ART**

- Hemogram
- Serum biochemistry (LFT, RFT)
- Lipid profile.
- CD4 & plasma viral load.
- CXR

**Assessments after starting treatment**: Once therapy has begun, there should be additional clinical and laboratory monitoring including:

<table>
<thead>
<tr>
<th>Antiretroviral drug class</th>
<th>Examples</th>
<th>First approved to treat HIV</th>
<th>How they attack HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nucleoside/Nucleotide Reverse Transcriptase Inhibitors (NRTIs, nucleoside analogues, nukes)</td>
<td>Lamivudine, Abacavir, Zidovudine, Stavudine, Zalcitabine, Didanosine, Emtricitabine, Tenofovir</td>
<td>1987</td>
<td>NRTIs interfere with the action of an HIV protein called reverse transcriptase, which the virus needs to make new copies of itself.</td>
</tr>
<tr>
<td>Non-Nucleoside Reverse Transcriptase Inhibitors (non-nucleosides, non-nukes)</td>
<td>Delavirdine, Efavirenz, Etravirine, Nevirapine</td>
<td>1997</td>
<td>NNRTIs also stop HIV from replicating within cells by inhibiting the reverse transcriptase protein.</td>
</tr>
<tr>
<td>Protease Inhibitors (PIs)</td>
<td>Sequinavir, Ritonavir, Indinavir, Nelfinavir, Lopinavir, Amprenavir</td>
<td>1995</td>
<td>PIs inhibit protease, which is another protein involved in the HIV replication process.</td>
</tr>
<tr>
<td>Fusion or Entry Inhibitors</td>
<td>Enfuvirtide, Maraviroc</td>
<td>2003</td>
<td>Fusion or entry inhibitors prevent HIV from binding to or entering human immune cells.</td>
</tr>
<tr>
<td>Integrase Inhibitors</td>
<td>Raltegravir</td>
<td>2007</td>
<td>Integrase inhibitors interfere with the integrase enzyme, which HIV needs to insert its genetic material into human cells.</td>
</tr>
</tbody>
</table>
Assessment for signs/symptoms of potential drug toxicities
Adherence counselling and assessment of adherence
Assessment of response to therapy and signs of treatment failure
Weight measurement
CD4 testing at least every six months (if available)
Haemoglobin monitoring for patients on AZT

At the minimum, monitoring should take place 2, 4, 8, 12 and 24 weeks after treatment begins and then every six months once the patient has stabilised on therapy

Nurses’ Responsibility
- The Nurse in partnership with the physician, coordinates patient care and treatment.
- Developing a trusting and supportive relationship with the client.
- A family-centred, multidisciplinary team approach to care is beneficial to patients.
- Educating the client on need to strictly adhere to doses. Encouraging him to be regular and educate him on the consequences of missed doses, also encouraging him to discuss freely his reactions to ART.
- The Nurse recognises and values each team member’s contribution.
- The Nurse is the key resources in referring patients to support from the community and other linkages services.
- Critical components of the successful treatment of patients in which Nurse’s role is crucial.

Conclusion
The availability of new drugs and drug combination to combat HIV infection has translated into progressive clinical benefits for patients. We have entered an era of improved therapeutic success with reduced rates of opportunistic infections and hospitalisation. HIV can be managed on the line of chronic diseases like diabetes, hypertension etc. in which Nurse’s role is crucial. Nurses play an essential role in the promotion of successful adherence, nutritional counselling, thereby Nurse can increase the Quality of Life of the HIV infected people.

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