Academic Alliance for AIDS Care and Prevention in Africa

ATIC News

March 2004

A quarterly newsletter of The AIDS Treatment Information centre

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A model for AIDS care and prevention in Africa is born

By Barbara Bitangaro

THE first ever large-scale state-of-the-art AIDS clinic, laboratory and medical training centre in Africa is now fully operational at Mulago Hospital premises in Uganda.

The project is operated by the Academic Alliance for AIDS Care and Prevention in Africa (AA), an alliance between 9 Ugandan and 5 North American scientists. Makerere University and Mulago Hospital are senior partners in the alliance.

AA has so far trained 144 physicians from across Africa in enhanced care of HIV including the use of antiretrovirals.

AA is funded by various pharmaceutical companies and the Bill and Melinda Gates Foundation. AA is found at the new Infectious Diseases Institute at Mulago Hospital.

Academic Alliance

President Museveni and Merle Sande of AA at the launch

"People have thought that this is another ivory tower that will soon be forgotten. But that is not the case. We will develop long term prevention strategies and continuing medical education for this programme," Dr Fred Wabwire-Mangen told new staff members at Mulago recently.

It is part of the making of a model for AIDS care and prevention in Africa. Whatever works in Mulago Hospital will be taken to rural areas, to Kenya and other parts of the region," Wabwire-Mangen said.

The centre was officially launched by President Yoweri Museveni of Uganda in 2001.

Uganda was chosen as the regional headquarters because of the president's and opinion leaders' role in the fight against AIDS, making it the most successful African country in respect to

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Unique AIDS centre opens

A NEW AIDS Treatment Information Centre (ATIC), the first of its kind in Africa, has opened at the Institute of Public Health (IPH), Mulago Hospital, Kampala.

ATIC's vision is to develop a sustainable framework for the provision of a specialist AIDS treatment information service which will enhance AIDS care in Africa and serve as a model for other resource-limited settings.This vision will be achieved through publication of a quarterly newsletter, a website and a state-of-the-art call-in-centre for health workers who are involved in the provision of care for people living with HIV/AIDS (PLWHA).

"This service is the first of its kind with respect to care provision in Uganda. It will give opportunity to care providers in the region to call and have their questions answered directly," Professor David Serwadda, Principal Investigator ATIC said during a recent interview with *ATIC News* at his office at IPH.

"This is one of the most important ways by which providers can receive on demand, up-to-date, well-researched information on treating people with HIV/AIDS, he said.

"All the health worker has to do is to beep the centre and we will be able to call back and answer the query," clinical pharmacist Robinah Nganwa told the February group of AA trainees last week.

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The project is funded by The Gates Grant Foundation and Roche Pharmaceuticals

From ATIC News

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ATIC is located on 1st floor Makerere University Institute of Public Health, Mulago Hospital. ATIC acknowledges the support of all its funders.

Africa faces new HIV challenge

People living with HIV / AIDS (PLWHA) can now live a normal and productive life if they have consistent access to Antiretroviral (ARV) therapy. Antiretroviral therapy commenced in 1987 with zidovudine (AZT), a drug initially developed for cancer. The introduction of triple therapy regimens (HAART- highly active antiretroviral therapy) in 1995, led to 80% reduction in the morbidity and mortality rate of PLWHAs in the western world. New drugs are continually being developed to combat the scourge. Healthcare workers start therapy for patients with clinical symptoms of HIV/AIDS or when the CD4 count is below 200. However, of the 25.4 million HIV infected people in sub-Saharan Africa, about a third need treatment, and yet less than 100,000 are on ARVs (*UNAIDS AIDS epidemic update 2003*). WHO and UNAIDS have committed themselves to the "3 by 5" initiative to provide ARVs to 3 million people in developing countries by the end of 2005. Both health workers and patients must understand how antiretroviral drugs work, their side effects, specific regimen, when to take them and the absolute need for strict adherence. Prophylaxis and treatment of AIDS-related opportunistic infections is also an essential life-saving component of AIDS care. The Academic Alliance for AIDS Care and Prevention (AA) in Africa has in this regard taken the initiative to build a large-scale-state of the art clinic and training centre where healthcare workers in Africa will be trained in the provision of ARVs. The AIDS Treatment Information Centre (ATIC), which will be located in the new Institute, will work with AA to provide the vital information to allow healthcare workers throughout resource-limited Africa, to enable patients to make informed choices. This will be done through the state-of-the-art toll free call-in centre, a quarterly newsletter, and ATIC website. ATIC is therefore excited about its vital role in supporting the implementation of the WHO and UNAIDS' "3 by 5" initiative, by working synergistically with healthcare workers to help them provide the best options in treatment to their patients. – **The Editor**

A model for AIDS care takes off

From page 1

reducing spread of the disease.

With prevalence rates of over 30% in 1992 at various sentinel surveillance sites, Uganda has managed to bring down its infection rates to as low as 5.6% at some sites. Prevention has been the cornerstone of Uganda's HIV activities plus a strong element of care and support across a continuum (hospitals, health centres, community, NGOs).

A grant from the Bill and Melinda Gates Foundation enabled the AA to begin seven programmes dealing with specific issues that impact on people living with HIV/AIDS (PLWHA).

Programme 1 led by Professor Fred Wabwire-Mangen, deals with the messages and information component while programme 2 is the AIDS Treatment Information Centre. The latter will have a call-in centre where physicians throughout Africa will have their queries about HIV/AIDS answered. The ATIC newsletter will also provide current information on

Prof. Serwadda is at the forefront of the ATIC

adherence, drug reviews, post exposure prophylaxis, resistance etc.

The logic is that soon thousands of people will be able to access ARVs and these drugs, which can be toxic, require that strict adherence to dosage and timing be observed. Physicians must be equipped with information on how to prescribe the drugs.

Programme 3 looks at pre-test and post test counselling of people living with HIV/AIDS (PLWHA). "As access to ARVs increases, VCT is not only about ARVs, but giving care to people with HIV," Cheryl Leichty, a visiting fellow said, adding that, "We want to combine offering VCT in hospital and in homes after discharge, and to link people to services if they are positive."

A recent baseline study found that while a significant number of people admitted in the wards had been tested for HIV, most had never been counselled.

Programme 4 focuses on adherence, an important treatment marker.

Programme 5 aims to improve care through operational research. "As we provide care, we look for outcomes which will help us carry out our activities," Dr Elly Katabira said.

Programme 6 and 7 are the behavioural surveillance and repeat cross-sectional surveillance studies. “The programme is based on the shortcomings of ARVs. People are living longer and infecting other people. People are looking healthier and you know that sex is at the centre of HIV spread. We fear that there will be false security,” Dr Edson Muhwezi said

Know when to use Nevirapine

NEVIRAPINE is an antiretroviral given to pregnant women and their babies to prevent mother-to-child transmission of HIV. Robinah Nganwa, a clinical pharmacist, reviews the drug

NEVIRAPINE is a non-nucleoside reverse transcriptase inhibitor with activity against Human Immunodeficiency Virus type 1.

Therapeutic Indication

Used in combination with other antiretroviral agents for the treatment of HIV infection and in the prevention of mother to child transmission.

Dosage and Administration

Adult: Above 50kg: 200mg once daily for the first 14 days (has been found to lessen incidence of rash) followed by 200mg twice daily.

Paediatrics: 2 months – 8 years: 4mg/kg once daily for the first 14 days, followed by 7mg/kg twice daily.

Eight years — 16years (under 50kg): 4mg/kg once daily for the first 14 days, followed by 4mg/kg twice daily. Above 50kg, use adult dose. Dosage should not exceed 400mg daily.

Pregnant women: A single 200mg dose orally at onset of labour and a single 2mg/kg oral dose to babies within 72hours.

Contraindications and precautions

Hypersensitivity to the active substances.

For patients who develop a rash during the initial 14-day period, the dose should only be increased when the rash subsides. It should be discontinued permanently if a severe skin rash develops or if a rash is accompanied by fever, blistering, oral lesions, conjunctivitis, facial swelling, fatigue, malaise, hepatitis, lymphadenopathy, renal dysfunction, granulocytopaenia and muscle or joint pains.

Should be used with caution in patients and pregnant women with high CD4 counts. Not recommended for use in Post Exposure Prophylaxis. (**See page 4**)

Side Effects

Generally well tolerated. However rash may occur in up to 20% of patients in the first six weeks after starting therapy.

Severe and life-threatening skin reactions can occur including Stevens-Johnson syndrome and, more rarely, toxic epidermal necrolysis. Hypersensitivity reactions including angioedema, urticaria and anaphylaxis have been reported.

Management of patients who develop rash while receiving nevirapine should be based on the type and severity of the symptoms. Mild to moderate rash resolves within two weeks in about 50% of patients and within one month in 75% of patients. These patients may be treated symptomatically with antihistamines, antipyretics, and/or non-steroidal anti-inflammatory agents.

Abnormalities in liver function tests are also common, and severe hepatitis and hepatic necrosis, occasionally fatal have occurred.

Women and patients with higher CD4 counts (pre-treatment CD4>250) are at considerably higher risk of hepatic adverse effects often associated with rash. Nevirapine should not be used in patients with ASAT or ALAT> 5 times the upper limit of normal.

Other common side effects include nausea, vomiting, diarrhoea, abdominal pain, myalgia, fatigue, fever and headache.

Monitoring parameters

Toxicity: a) Physical Examination: Clinical monitoring at two weeks and then monthly for signs of skin or hypersensitivity reactions, especially during first 6 weeks of therapy. The patient should also be counselled on the need to report symptoms such as yellowing of the eyes and skin.

b) Laboratory parameters: The pharmaceutical manufacturer suggests that liver enzymes should be monitored every 2 weeks during the first 2 months of treatment, again at 3 months, and every 3 to 6 months thereafter. Renal function tests including routine blood chemistry, and complete blood counts should be done periodically during therapy. However, due to limited resources, monitoring for liver toxicity in many countries is done by checks at every visit for malaise, nausea, vomiting, right upper quadrant pain, and/or jaundice.

Interruption of nevirapine therapy

If a patient misses a dose of nevirapine, the dose should be taken as soon as it is remembered; however, if a dose is skipped, a double dose of nevirapine should not be taken to make up for the missed dose.

Treatment should be interrupted if any grade 3 or 4 adverse effects occur and restarted at 200mg once daily, increasing to 200mg twice daily, if liver function returns to normal. If interruption in therapy is more than 7 days, patients should be restarted on the once daily dosing for 14 days.

Interactions

Metabolism of nevirapine is mediated in part by the Cytochrome P3A4 isoenyme and concomitant use of drugs that induce this enzyme (e.g. rifampicin) may result in reduced plasma concentrations of nevirapine potentially increasing the risk of development of viral resistance.

Plasma concentrations of nevirapine may be increased by concomitant use of drugs that inhibit this isoenzyme (e.g. cimetidine, macrolides).

In addition, nevirapine is an inducer of CYP3A4 and may reduce blood levels of other drugs metabolised by this isoenzyme (e.g. ketoconazole, indinavir, saquinavir, oral contraceptives). Therefore the use of nevirapine with the above-mentioned drugs is not recommended.

Pregnancy, lactation and post-exposure prophylaxis

Use in pregnant women with high CD4 counts and in Post Exposure Prophylaxis is not recommended. However it may be used in prevention of mother to child transmission.

It is recommended that HIV-infected mothers do not breast-feed their infants to avoid risking postnatal transmission of HIV or that they breast feed exclusively for the first six months. Mothers are also advised to discontinue nursing if they are receiving nevirapine.

Storage

Store below 30ºC.

Presentations

Viramune tablets 200mg

Viramune suspension 100mg/ml

Nevimune Tablets 200mg

Nevimune suspension 50mg/5ml

Okumune Tablets 200mg

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Related story on page 4

Cut here

Risk of Nevirapine-related rash ups with increasing CD4 count

Recent studies have shown that the use of nevirapine in patients with high CD4 counts has increased the incidence of hepatotoxcity, in some cases resulting in life threatening situations and even death. This article also discusses use of nevirapine in post-exposure prophylaxis.

THE study "Serious Adverse Cutaneous and Hepatic Toxicities Associated with Nevirapine Use by Non-HIV-Infected Individuals," concluded that serious hepatic and cutaneous toxicities occur in non-HIV-infected individuals who receive short-term nevirapine therapy.

The rate of severe hepatotoxicity may be greater in non-HIV-infected individuals than in HIV-infected persons and appeared to be associated with higher CD4 counts. The use of Post Exposure Prophylaxis (PEP) regimens containing nevirapine should thus be discouraged. (*J Acquired Immune Defic Syndr.2004; 35(2): 120-125*). This supported findings of a previous study published in the *Ann. Intern Med 2002; 137(2): 146-7.*

A paper, "*Optimal Treatment of Nevirapine-Associated Hepatotoxicity Remains Uncertain,*" by Montaner *et al*, stated that the risk of serious hepatotoxicity may be increased in individuals with hepatitis B or C, abnormal liver enzyme levels at baseline, or higher CD4 cell counts (greater than 350/ul).[1]

An important study presented at the 2nd International AIDS Society (IAS) Conference on HIV Pathogenesis and Treatment indicates that there is a significant risk of nevirapine-associated hepatotoxicity in pregnant women, especially those with high CD4 cell counts, and that the progression to severe hepatotoxicity may be explosive in nature and not predicted by the patient's liver enzyme level determined before and during nevirapine therapy.[2]

As discussed below, this study expands on earlier studies that demonstrated the risks associated with nevirapine therapy, including the increased risk present in healthier patients in whom HIV infection is less advanced i.e. those with higher CD4 cell counts.

UNIFEM

Women demand for HIV treatment including Nevirapine therapy

The risk of nevirapine-related hepatotoxicity and rash, which seems to be caused by an acute and idiosyncratic hypersensitivity reaction, increases with increasing CD4 cell counts. In this regard, studies have shown that patients with higher CD4 cell counts, especially women with CD4 cell counts greater than 250/µL and men with counts greater than 400/µL, are at particular risk.[3]

Further, the risk of rash and hepatotoxicity are high in persons with a normal immune system, for example, persons who may have had a recent exposure to HIV.

Nevirapine hepatic toxicity can manifest in clinical hepatitis (e.g. jaundice, fever, nausea, vomiting, abdominal pain, and/or hepatomegaly), elevated serum ALT and AST concentrations without clinical hepatitis and end stage liver failure, requiring liver transplantation.

As a result, the Centre For Disease Control (CDC) recommends against the use of Nevirapine as post exposure prophylaxis.[4] The use of nevirapine in patients and pregnant women with high CD4 cell counts is also not recommended and efforts must be made to measure CD4 counts before starting a patient on a nevirapine-containing regimen.

However due to the 'once dosing' regimen used in prevention of mother-to-child-transmission, nevirapine may very infrequently cause hepatotoxicity in this instance.

References

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IN BRIEF

AIDS crisis

The annual AIDS epidemic update 2003, reports an estimated 40 million people living with HIV worldwide. Globally, an estimated 5 million people were newly infected and 3 million people died of AIDS in 2003. Sub-Saharan Africa, the most severely affected region of the world, accounted for over 3 million of these new infections and 2.3 million AIDS deaths.

Guidance

UNAIDS and WHO have developed guidance on VCT in ANC settings, in anticipation of availability of MTCT interventions: *Voluntary Counselling and Testing for HIV Infection in Antenatal Settings: Practical considerations for implementation*.

Infections

Infectious diseases are responsible for almost half of mortality in developing countries. These deaths occur primarily among the poorest people because they do not have access to drugs. Over half of infectious disease mortality in adults can be attributed to HIV, TB and malaria.

Saving lives

Antiretrovirals (ARVs) to treat the most seriously HIV-compromised individuals in South Africa could save between 500,000 to 1.7 million lives over a 5-year period, according to the recent *South African Joint Health and Treasury Task Team Report, 2003*

WHO/UNAIDS

The effect of gender, pregnancy on response to HIV therapies

By Mike Postelnick (RPh, BCPS)

GENDER may affect response to therapies for HIV. There is reason to suspect gender differences in pharmacokinetics of HIV drugs, but data are limited since women have been under-represented in studies to date.

Cordaro and colleagues demonstrated pharmacokinetic variability in zidovudine pharmacokinetics during various phases of the menstrual cycle.[1] Differences in protease inhibitor serum concentrations were demonstrated between men and women for both saquinavir and indinavir.[2,3]

Data show that adverse effects of highly active antiretroviral therapy (HAART) regimens, such as lactic acidosis, hepatic steatosis, and central fat accumulation, are more frequent in women compared to men. A recent paper published by Anderson and colleagues may shed some light on a potential reason for these differences.[4] These investigators demonstrated significantly increased intracellular triphosphate concentrations of zidovudine and lamivudine in women as compared to men. Since the intracellular triphosphate forms of zidovudine and lamivudine are the pharmacologically active moieties, these data may provide a basis for the observed gender differences in these adverse events.

Multiple physiologic and metabolic changes occur during pregnancy that can further alter systemic exposure to antiretroviral agents.

Proposed mechanisms include absorption changes due to prolonged gastric and intestinal emptying time, decreased gastric acid secretion, and increased mucus secretion; increased drug volumes of distribution caused by increased total body water and fat, and decreased plasma protein concentration; changes in elimination related to stimulation of hepatic microsomal enzymes and inhibition of microsomal oxidases; the effects of the fetus including compartmentalisation of drugs in the fetus and placenta, biotransformation of drugs by the fetus and placenta, and additional elimination of drugs by the fetus.[5,6]

Multiple physiologic and metabolic changes occur in pregnancy

Although these physiologic and metabolic changes are known to exist, few trials have examined the effect of these factors on the pharmacokinetics of antiretroviral agents, and their impact has yet to be demonstrated. These changes are likely to vary throughout the stages of pregnancy, and a true evaluation of the magnitude of their effects await a trial that examines antiretroviral pharmacokinetic changes by trimester.

In summary, it is clear that gender differences in antiretroviral pharmacokinetics exist. These differences may in part explain observed differences in antiretroviral adverse effects between genders. Physiologic and metabolic changes associated with pregnancy alter systemic exposure to antiretrovirals.

The magnitude of these changes as well as their effect on long-term post-partum antiretroviral efficacy await further study.

These trials may bear out the

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QUESTIONS *with* Robinah Nganwa

WHY are some Protease inhibitors given with another protease inhibitor?

THE concept of using two Protease inhibitors (PI) concomitantly to increase plasma concentration or improve convenience was first seen with the combination of Saquinavir and Ritonavir. It is called PI- boosted therapy. Simultaneous administration of two PI's takes advantage of beneficial pharmacokinetic interactions and may circumvent many of the drugs' undesirable pharmacological properties. In addition, dual PI's decrease interpatient variability making drug concentrations more predictable. A number of potentially beneficial metabolic drug interactions exist for combinations of two PI's. One drug is used to inhibit the metabolism of the second, producing increased bioavailability, decreased clearance or both. Two-way interactions also exist in which the pharmacokinetics of each drug benefit. . Each dose of Kaletra contains 400mg of Liponavir (LPV) and 100mg Ritonavir (RTV) given twice daily. LPV is a highly active PI, but its bioavailability is low and clearance rapid. In combination with low doses of RTV, the plasma concentration of LPV is increased by more than 100-fold owing to inhibition of LPV's metabolism in the liver and GIT.

Send your questions to The Clinical Pharmacist, ATIC News, c/o IPH, P.O Box 7072, Kampala

Uganda, Ethiopia ally to fight AIDS

The International Training & Education Centre on HIV (I-TECH), University of Washington and University of San Francisco in Ethiopia and Academic Alliance (AA) in Uganda have entered into an agreement to work together to fend off the HIV menace in the Africa region

By Tesfai Gbare-Kidan (MD I-TECH)

COLLABORATION between I-TECH, the universities and Academic Alliance in Uganda will undoubtedly strengthen regional capacity to respond to HIV/AIDS epidemic.

Academic alliance (AA), in Uganda has a well-established HIV clinical training program for physicians. In nearby Ethiopia, I-TECH is scaling up its efforts to train teams of HIV health care providers and develop two university affiliated demonstration and training sites on HIV continuum of care including anti-retroviral therapy.

The Academic Alliance's one-month training programme, involving both seminars and extensive clinical work in Mulago hospital, could provide Ethiopian physicians an excellent opportunity to acquire knowledge and practice skills in HIV care.

Clinical training of such intensity and duration has not been established in neighbouring Ethiopia as yet. The greater efficacy of clinical practice over the passive forms of training has been well established.

There are additional advantages for Ethiopian physicians to seek training in Uganda rather than Europe or the United States. They would be training in a Sub-Saharan African setting similar to their own, with almost identical opportunistic infections and resource constraints. They would also benefit from travel cost saving. Furthermore, the AA training on HIV easily qualifies them as trainers on HIV.

In sharing expertise and experiences, trainers of either organisation could train at both centres during their tour of duty. They could also fill in training gaps with a short notice because of the proximity of the two host nations. ITECH is developing pre and post-serve curricula on HIV Care for physicians, nurses and pharmacists.

Similarly, Academic Alliance has developed an in-depth curriculum for physicians. The two could collaborate in educational material development. In evaluating the effectiveness of training programmes, both organisations will go beyond documenting that training occurred and assure that skills have been transferred to the workplace.

Opportunities for collaboration in research are exciting. Also, it is apparent that some of the clinical features, in particular those related to anti-retroviral therapy, may be distinctly African. The responses to European or US formulated regimens may, therefore, require an African definition.

Jimmy Adriko

AA trainees from different parts of Africa take notes during a lecture

HIGHLIGHTS

- The alliance will strengthen regional capacity against AIDS
- Enable cross-exchange of physicians by both countries
- AA has developed an in-depth curriculum for physicians
- Strategies will be shared to evaluate effectiveness of programmes
- Skills transferred to the workplace will be monitored and evaluated

Managing PI interactions of HIV therapeutics

Protease Inhibitor Dosing Guidelines		
Antiretroviral	**Usual Dose**	**Dose adjustment and Route of Elimination**
Saquinavir (SQV) Fortovase - Soft gel Invirase - Hard gel	Invirase: Not given without RTV Fortovase: 1200 mg tid with a full meal	With RTV: SQV 400mg +RTV 400mg bid or SQV 1000mg + RTV 100mg bid With EFV or NVP: Add RTV With LPV/r: SQV 800mg With NFV: SQV 1200mg bid Hepatic metabolism: CYP450 (3A inhibitor)
Indinavir (IDV) Crixivan	800 mg tid on an empty stomach or 300 calorie snack; must consume at least 1 liter of non - alcoholic fluid per day	With RTV: IDV 400mg + RTV 400 mg bid with food; IDV 800 mg + RTV 100-200 mg bid with food With EFV or NVP: IDV 1000mg tid or add RTV With LPV/r: IDV 600mg + LPV/r 3 cap bid With NFV: IDV 1200 mg bid Hepatic metabolism: CYP450 (3A inhibitor)
Nelfinavir (NFV) Viracept	1250 mg bid or 750 mg tid with a high fat meal	Hepatic metabolism: CYP450 (3A inhibitor)
Lopinavir/Rotonavir (LPV/r) Kaletra	3 capsules (LPV 400 mg/RTV 100mg) bid with food	With EFV or NVP: LPV/r 4 capsules bid Hepatic Metabolism: CYP450 (LPV may be 3A inducer, RTV 3A inhibitor)
Ritonavir RTV) Norvir	600mg bid with food	Hepatic metabolism: CYP450 (Potent 3A inducer, 2D6 inhibitor, 2C9 inducer)
Amprenavir (APV) Agenerase	Capsules: 1200 mg bid, avoid high fat meal Oral Solution: 1400 mg bid	Solution and Capsules are NOT equivalent dosing With EFV or NVP: APV 1200 mg tid or RTV 200mg + APV 1200 mg bid With **RTV**: APV 600 mg + RTV 100 mg bid or APV 1200 mg + RTV 200 mg od With **LPV/r**: Dose unclear, use a minimum of APV 900 mg bid. Studies on-going. Hepatic metabolism: CYP450 (weak 3A inhibitor and inducer)
Fosamprenavir (Fos-APV) Lexiva	1400 mg bid with or without food 1400mg +RTV 200mg od PI experienced patients: 700mg + RTV 100mg bid	With RTV: Fos-APV 700mg + RTV 100mg bid With EFV: Must dose with RTV, additional 100mg daily of RTV recommended LPV/r: Decreased levels of both drugs, concomitant use not recommended Hepatic metabolism: CYP450 (weak 3A inhibitor and inducer)
Atazanavir (ATV) Reyataz	400mg od with food PI experienced patients: 300mg + RTV 100mg od	With EFV, NVP or TDF: ATV 300mg + RTV 100 mg od With LPV/r or RTV: ATV 300 mg od Hepatic metabolism: CYP450 (3A inhibitor)

Tables on Nucleoside and Non-Nucleoside RTIs available

By Kim Scarsci, Pharm D

THE medications used in HIV therapy have revolutionised the potential success of HIV treatment. The benefit of antiretroviral (ARV) therapy is well documented, but clinicians must consider the implications of combining these medications to achieve an optimal regimen.

Drug interactions among these agents are complex. Pharmacologically drug interactions can be used to our advantage by decreasing the number of pills per day, frequency of dosing, and food restrictions.

These same interactions can be detrimental when the result is inadequate serum concentrations, which can lead to the development of viral resistance and virologic failure. Conversely, supra-therapeutic levels may increase the risk of medication toxicities.

The tables summarise the interactions that can be expected between protease inihibitors and resultant dosing recommendations.

These recommendations are continually evolving as pharmacokinetic data become available. It is imperative that all clinicians consider these potential interactions between antiretroviral drugs, as well as concomitant medications that may result in a drug interaction, every time a patient's medication regimen is changed.

As our knowledge of these interactions continues to expand, evaluating the potential interactions and mechanisms of each interaction will allow clinicians to tailor any regimen to optimise efficacy while avoiding toxicities.

The writer is a HIV Clinical and Research pharmacist North Western Memorial Hospital, Chicago, Illinois

Gender and HIV therapies

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need for dose individualisation between genders as well as during pregnancy.

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ATIC News

Send your queries to rnganwa@ iph.ac.ug or skidde@iph.ac.ug

Reason for the 3 by 5 initiative

Lack of access to antiretroviral therapy (ART) is a global health emergency. To deliver antiretroviral treatment to the millions who need it, we must change the way we think and change the way we act – **LEE Jong-wook, Director-General, World Health Organisation**

THE 3 by 5 Initiative was created because currently, six million people infected with HIV in the developing world need access to antiretroviral therapy (ART) to survive. Only 400,000 have this access.

To address this emergency, WHO is fully committed to achieving the 3 by 5 target — getting three million people on ART by the end of 2005.

WHO has developed an initial strategic framework for its campaign based on 5 pillars:

- Global leadership, strong partnership and advocacy
- Urgent, sustained country support
- Simple, standardised tools for delivering ARV therapy
- Effective, reliable supply of medicines and diagnostics
- Rapidly identifying and re-applying new knowledge and successes

WHO

WHO / P. VIROT

WHO DG, Lee Jong-Wook

Unique AIDS centre opens

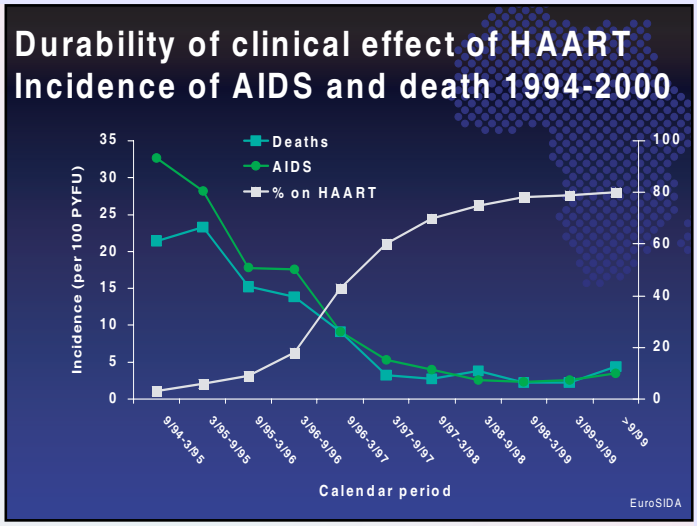
From page 1

ATIC has been well equipped with funding from the Bill and Melinda Gates Foundation and Roche Pharmaceuticals to

- Meet the need for rapid correct responses to a wide variety of questions on HIV care
- To provide a continuous source of well-formulated and succinct information on HIV care to healthcare providers
- Provide a resource for physicians, pharmacists, nurses, counsellors, policy makers and other healthcare workers involved in the provision of HIV care and prevention.

At a meeting with new staff members, Serwadda further explained the rationale behind establishment of the ATIC.

He said significant reductions in HIV related morbidity and mortality had been observed following the introduction of highly active antiretroviral therapy (**See graph**). And following price reductions of ARVs, several African patients would soon be able to access these drugs.



HAART in the developed world has lowered AIDS incidence

"Using these drugs however, can have adverse reactions. They are not very dissimilar to cancer drugs and can be very toxic," he said.

Some of the other complexities regarding ARVs, he said, included drug resistance, drug interactions that render other drugs a patient may be taking ineffective, storage of drugs and the many new drugs on on the market. "I have been to conferences where patients were taking as many as 60 pills a day. We need to look at this. People need a place where they can ask questions and get answers," he said.

ATIC staff train at St James

TWO clinical pharmacists from the AIDS Treatment Information Centre have completed a two weeks skills development study tour in HIV/AIDS management information delivery at the National Medicines Information Centre, Dept. of Pharmacology and Therapeutics, St James Hospital in Dublin, Ireland.

Saul Kidde and Robinah Nganwa underwent on-the-job training where they acquired skills on how to search for information on HIV/AIDS and relay it to physicians.

Department of Pharmacology and Therapeutics Trinity Health Sciences, St James's Hospital

The pharmacists also visited an HIV/AIDS clinic and they participated in ward rounds. Every Wednesday, they attended medical ground rounds that involved case presentations.

At a HIV workshop in Trinity College, Dublin, world renowned HIV specialists Dr Ceppie Merry and Dr Mairin Ryan gave a talk on HIV in Africa assisted by Saul and Robinah.

The clinical pharmacists will manage the ATIC call-in centre. This training is part of the continuing medical education (CME) on HIV/AIDS that is being provided by the Academic Alliance-Gates Grant.

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