CASE STUDY

HIV CARE INTERVENTION – LIMITED RESOURCES, LIMITLESS OPPORTUNITIES

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This case is intended to inspire HIV caregivers and patients that, even in the most trying circumstances of limited resources, AIDS can be managed effectively with highly active antiretroviral therapy (HAART) and perseverance.

Our patient, a 32-year-old man, presented to Themba lethu Clinic with AIDS in November 2004. He had been diagnosed with HIV infection in 2000. At that time he was asymptomatic and attended the state HIV clinic.

His first admission was for *Pneumocystis jiroveci* pneumonia (PCP). At the time our unit was screening patients for a clinical trial. This patient was not our 'usual' trial candidate. He had been expelled from school, had drug and alcohol addictions and a criminal conviction, and was unable to maintain employment (all indicating antisocial personality traits). He also had a history of poor compliance to prescribed medications. Any of these behaviours could have convinced us that he would be unsuitable for the stringent requirements for compliance and clinic follow-up required by clinical trials.

In addition his economic vulnerability could have made study participation complicated. He lives in a shelter for homeless people living with AIDS. This is a scarce resource in South Africa, a country where many people survive on an income of R150/month. This financial reimbursement is the SA Medicines Control Council (MCC) requirement for study clinic visits.

Despite these challenges, the clinic staff were convinced that the patient understood the severity of his disease and that ongoing support would ensure success.

His past medical history included two episodes of pulmonary tuberculosis (TB), in 2003 and 2004 . He was poorly compliant to standard anti-TB drugs (isoniazid (INH), rifampicin (RIF), pyrazinamide (PZA) and ethambutol) during both treatment periods. He also had psoriasis since adolescence.

On initial examination the patient had clinical AIDS, PCP, severe generalised psoriasis, and extensive mucocutaneous Kaposi's sarcoma (KS) lesions. The twice-daily HAART study regimen (lopinavir/ ritonavir 400/100 mg + stavudine 30 mg + 3TC 150 mg bd) was commenced on 19 November 2004. These drugs are available from the South African national antiretroviral (ARV) programme. The pneumonia responded to co-trimoxazole but the pyrexia and anaemia persisted, necessitating readmission in December 2004. Sputum microscopy was now positive for mycobacteria and the retreatment regimen of RIF, INH, ethambutol, PZA, + streptomycin was commenced. At this time the CD4 count was 18 cells/µl and the viral load > 100 000 copies/ml. The lopinavir/ritonavir was replaced by efavirenz because of the potential interaction with RIF. Ultrasound examination showed marked hepatosplenomegaly and numerous small abdominal lymph nodes which were presumed to be consistent with TB or possibly visceral KS.

The patient was admitted for a second time in December because of deterioration in his general condition and also to assist with compliance with these complicated drug regimens.

In January 2005 he developed abdominal pain, vomiting and respiratory distress. Immune reconstitution inflammatory syndrome (IRIS) or a complication of abdominal TB was considered. Intestinal obstruction was excluded and severe oesophageal candidiasis was diagnosed on gastroscopy. The abdominal ultrasound findings remained unchanged.

A Bactec blood culture was positive for *Mycobacterium tuberculosis* complex and *M. avium* complex despite 2 months of TB directly observed therapy (DOT). Bone marrow trephine biopsy on 28 February revealed features consistent with anaemia of chronic disease and a Ziehl-Neelsen stain was positive for mycobacteria.

Fluconazole and azithromycin were added to the regimen. Standard anti-TB drugs were continued while awaiting the Middlebrook indirect susceptibility results.

In March the antibiogram showed resistance to RIF and partial INH sensitivity, susceptibility to ethambutol being retained. RIF and streptomycin were replaced by ciprofloxacin and amikacin and the patient was transferred to a TB hospital. He did not co-operate with staff at this hospital and was returned to our care. A liver aspirate confirmed the presence of granulomatous hepatitis but stains and immunohistochemistry (CD34) were negative for mycobacteria and KS respectively.

The patient developed bilateral oedema and inflammation of the lower limbs in hospital, and a deep-vein thrombosis (DVT) was excluded by Doppler ultrasound.

He was admitted again in May 2005 with worsening abdominal pain, vomiting, new cough and fever and painful feet.

The patient was diagnosed as having KS involvement of the feet, but peripheral neuropathy induced by stavudine or INH could not be excluded. Stavudine was replaced with tenofovir (obtainable by application to the MCC under section 22 on a named patient basis).

A computed tomography (CT) scan showed KS-associated hepatosplenomegaly with focal lesions, pulmonary nodules and a mass in the left ventricle. However, an encouraging sign was that for the first time since commencing HAART 7 months previously he achieved a viral load of < 50 copies/ml and a CD4 count of 179 cells/µl.

In June 2005 he was referred to the oncologists for worsening KS, probably related to IRIS. A skin biopsy confirmed plaque-phase KS, but interestingly stains for HHV8 were negative.

In July the patient arrived at the outpatient clinic with a new episode of fever, insomnia and tiredness. The pharmacy had not been dispensing amikacin, azithromycin and ciprofloxacin. On their reintroduction the symptoms abated. On 27 July he received the first dose of chemotherapy (adriamycin, etopicide) for KS. Surprisingly he tolerated the drugs well and experienced only tiredness, hair loss and anaemia.

We believe that our team's constant vigilance and persistence for 10 months have extended this patient's life. Integral to his care has been regular telephonic and clinic follow-up. Our greatest challenge was ensuring that he obtained the prescribed drugs. To our surprise he was compliant on the 13 different oral medications and 1 intramuscular injection daily for 8 months. One can only imagine the discipline and commitment required. Drug adverse effects and interactions would have overwhelmed anyone with a weaker resolve. He has had 7 admissions and required frequent social, laboratory and radiological monitoring (3 tissue biopsies, 1 CT scan, 3 ultrasound scans, 6 chest X-rays).

Every small improvement in the patient's health gives him a sense of achievement. He has been reunited with his family and has dealt with his feelings of guilt for the suffering he caused them. He acknowledges a second chance at life, recognises his own self-worth and looks forward to a better quality of life. He is now concerned about his future. He faces a number of challenges, as his current shelter is intended for terminal AIDS patients. As he recovers he will have to seek employment in an environment where jobs for unskilled people are scarce. He may no longer qualify for the state disability grant and will have to obtain independent accommodation. Re-entering a social environment in which crime and drug abuse are constant temptations will also be challenging.

The health care team continues to benefit from this experience. Everyday we are faced with AIDS victims who do not have access to ARVs or present too late. The South African ARV programme is in a fledgeling phase where misinformation and stigma regarding AIDS and ARVs still abound. Staff are despondent over overwhelming patient numbers, poor clinical facilities and support.

This case provides proof, and extends our hope, that even in late-stage AIDS and with numerous medical and social problems, and even within a resource-limited public health system, patients can still benefit from our interventions.

Permission: Although there are no clear identifying features, the patient was consulted regarding this publication and permission was granted.

The recent highly successful launch of the KOSH Branch (Klerksdorp/Orkney/Stilfontein and Haartebeesfontein)

From left to right: Dr Binu Luke, Clinical Manager, Tshepong Hospital, Dr Francois Venter, Clinical Director, Esselen Street Clinic and Reproductive Health and HIV Research Unit and lecturer in the Department of Medicine, University of the Witwatersrand (first presenter), Dr Ebrahim Variava, specialist physician and head of the Department of Internal Medicine, Tshepong Hospital, and Tanya Nielson, Research Pharmacist, Aurum Institute for Health Research. (Gavin Churchyard, Chief Executive Officer, Aurum Institute for Health Research, who did the second presentation, and Annette McFarlane, National Key Account Manager Inland HIV Sales Manager – Private Market (Aspen Pharmacare), responsible for arranging sponsorship, are unfortunately not present in the picture.)