Southern Sudan Medical Bulletin

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The only wheelchair in the Emergency Medical ward of Juba Teaching Hospital - note the footrest made from an old bandage - see page 11 *(credit Sharon Evemy)*

Contents

To inform, educate and positively influence the development of Health Services in the Southern Sudan

Established in 2008. A publication of the St Mary's Juba Hospitals link

Editorial

The St Mary's Hospital, Isle of Wight, UK – Juba Teaching Hospital, Southern Sudan Link

The St Mary's Hospital, IW-JTH Link was established in November 2007 by healthcare professionals at the respective hospitals with the overall objective "To promote understanding of the needs and to support the Government of Southern Sudan in order to improve clinical services through the development of education and training."

The Link is multiprofessional and dedicated to developing education and training. So far we have undertaken a fact-finding visit in March 2008, followed by 2 further visits, each by 4 experienced trainers in October 2008 and March 2009. In addition, 2 of our trainee doctors have spent 4 months at Juba Teaching Hospital and 2 medical students undertook one month's elective.

What then are our observations so far? The most obvious feature is the severe shortage of highly skilled healthcare professionals in Southern Sudan. There are clearly many able doctors and nurses working in and committed to Southern Sudan and there is a visible thirst for knowledge and learning. Critically however there is not yet a general culture of education and training.

The achievement of this culture of education and training requires, in my opinion, the creation and development of certain institutions to support and promote it. There need to be active Schools of Nursing and Midwifery in Southern Sudan giving recognised and validated qualifications. The doctors need to feel they can develop their careers in structured postgraduate educational programmes. A culture of learning is also greatly enhanced by the visible presence of an undergraduate medical school and university. Furthermore, there is a need for the professional regulatory bodies, such as a General Medical and Dental Council to ensure standards and quality of care.

A quality local publication such as the Southern Sudan Medical Bulletin also has a major role in the development of education. Not only is it a source of information and continuing professional development but it should encourage local healthcare professionals to undertake studies into local problems with a view to publication. This enables better understanding of local disease patterns and needs, promotes skills in scientific methodology and reasoning, enhances presentation skills, develops critical analysis and nearly always improves career prospects.

I would like to take this opportunity to encourage especially the younger doctors and other professionals working in Southern Sudan to get involved with the Southern Sudan Medical Bulletin and to undertake studies, however small, into local health problems. The Editors can help with advice and will look sympathetically upon submissions for publication.

Tim Walsh, BSc, MS, FRCS, Hon FCPS (Bangladesh)
Project Lead for the Juba Link

The **Southern Sudan Medical Bulletin (SSMB)** is a quarterly publication intended for Healthcare Professionals working in the Southern Sudan or those Healthcare Professionals in other parts of the world seeking information on health in the Southern Sudan.

It aims to offer education and information in all specialities and identify research that will inform the development of Health Services in the Southern Sudan. We plan to include reports of original research, critical/systematic reviews, case reports, clinical photographic materials, obituaries, letters to the Editor, use of drugs, medical news of public interest, nutrition matters, public health issues and stories of the health services in the Southern Sudan in the past.

The Bulletin is a publication of the St Mary's Juba link. It is published in mid-February, May, August and November and is free online at http://www.iow.nhs.uk/juba (under journals).

We encourage readers to print copies and pass them to colleagues.

Eye Complications of Acquired Immune Deficiency Syndrome (AIDS)

Part 1. Ocular surface and anterior segment manifestations

Wani MG[a], Eye Department, Mutare Provincial Hospital, P O Box 2481, Mutare, Zimbabwe

Introduction

Acquired Immune Deficiency Syndrome (AIDS) is the leading cause of sickness and death among young adults in developing countries. The introduction of highly active anti-retroretroviral therapy (HAART) has changed the epidemiology of AIDS from being a universally fatal illness to a chronic debilitating infection attended by multi-organ complications. Improved survival as a result of HAART has lead to increase in systemic and ocular complications as well as the appearance of syndromes related to immune reconstitution. HIV associated eye disease now occurs in 50-90% of patients at one point in the course of their illness[1]. Loss of sight is a feared complication because of its impact on the management of the systemic disease and the additional distress experienced by the patient who now has to rely on others for assistance with activities of daily living. This paper reviews anterior segment and external ocular disorders associated with AIDS in an effort to improve understanding of this disorder and facilitate early detection, referral and care of those presenting to any level of the health delivery system in South Sudan.

Southern Sudan is a country that has endured two decades of conflict during which infrastructure was destroyed and the population displaced to internally displaced camps and neighbouring countries. Although no population studies have been conducted to determine the prevalence of HIV in South Sudan, hospital based surveys suggest that prevalence may be low compared to that of countries in the region. This is likely to change and prevalence could increase rapidly due to increased movement within and between South Sudan and its neighbours. The prevalence of eye complications of HIV is likewise expected to increase, as patients survive longer due to availability of more effective anti-retroviral therapy and improved treatment for and prophylaxis against opportunistic infections. Eye complications of HIV can involve any ocular tissue and may indicate worsening of the underlying immune disorder. In some cases an eye lesion is the first sign of disease in a previously healthy patient. Diagnosis and treatment of anterior segment disorders and adnexial disease is an important component of comprehensive eye care strategy for HIV patients and must be undertaken aggressively in order to prevent disfigurement, preserve dignity and improve quality of life.

Table 1 describes the main eye complications of HIV and their relationship to CD4 count. This article focuses on those complications occurring on the anterior segment and adnexia that are easily recognised by inspection. Posterior segment and neuro-ophthalmological complications are difficult to diagnose at primary care level. Their diagnosis requires specialist knowledge and use of sophisticated equipment. A high index of suspicion should be maintained and prompt referral to an ophthalmologist made for any HIV patient who presents with cranial nerve palsies or complains of visual loss in a normally appearing eye. Detailed discussion of these complications will be the subject of a separate article.

Table 1. Eye Complications of HIV

CD4	Complications			
	Vascular	**Opportunistic infections**	**Tumours**	**Neuro-ophthalmological**
>500 cells/µl	Large vessel vaso-occulusive disease	1. Acute retinal necrosis 2. Molluscum contagiosium	Squamous cell carcinoma of the conjunctiva	HIV retinopathy
<500 cells/µl		HZO	1. Kaposi Sarcoma 2. Lymphomas	Cranial nerve neuropathy
<200 cells/µl		1. Pneumocystis Chroidopathy 2. Ocular TB		
<100 cells/µl	HIV retinopathy, conjunctival vasculopathy	3. CMV retinitis 4. Toxoplasmosis 5. Cryptococcal chroidopathy		Optic neuropathy Cranial nerve involvement

[a] wanimena AT mweb.co.zw

Opportunistic Infections of Ocular Adnexia

Herpes Zoster Ophthalmicus (HZO)

Herpes Zoster is caused by varicella zoster virus, which is a member of the herpes virus group. Primary infection occurs in early childhood when it presents as chicken pox, a self-limiting generalised exanthema that rarely involves the eye and heals without sequela. Following primary infection the virus migrates to the trigeminal ganglion where it remains quiescent for many years. If cell mediated immunity is reduced for any reason including infection with Human Immunodeficiency Virus (HIV), cancer or immunosuppressive therapy, the virus becomes activated and travels down the branches of the trigeminal nerve causing a typical vesicular rash (figure 1). The ophthalmic division of the trigeminal nerve is involved more frequently than other branches, hence the name Herpes Zoster Ophthalmicus (HZO). It occurs early in the course of HIV infection when the CD4 count is more than 200 cells/µl. It is therefore not considered an AIDS defining illness although its occurrence in a young person should raise the possibility of immune suppression. HZO occurs more commonly in Africa than Europe and the United States[2] where Cytomegalovirus infection is more common. Other complications of HZO include inflammation and loss of sensation of the cornea *(Neurotrophic keratitis*), inflammation of the sclera, iris and retina *(sleritis, iritis and retinitis). Herpetic neuralgia (PHN)* refers to debilitating pain and itching in the involved branch of the nerve persisting many months after healing of the acute lesion. It is due to irritation of nerve endings by the resulting scar tissue. Presence of a blister on the tip of the nose predicts eye involvement and should prompt early treatment with systemic steroids, in order to lessen severity of eye disease.

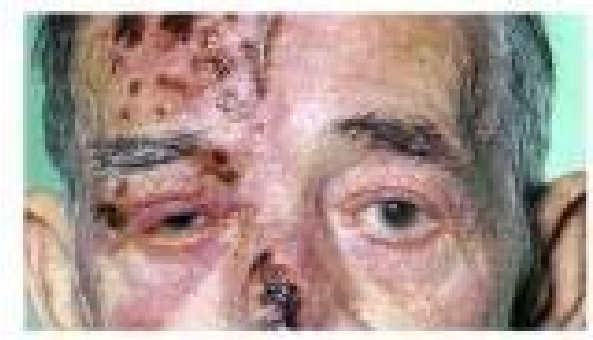

Figure 1. Herpes Zoster Ophthalmicus

Diagnosis of HZO can usually be made clinically without the need for laboratory work up. Treatment should begin with intravenous Acyclovir 10mg/kg for 5 days followed by oral Acyclovir 800mg five times daily for 9 days. This limits the duration of skin rash and reduces the prevalence of inflammatory eye complications. Patients who develop iridocyclitis and/or stromal keratitis may be treated with topical steroids. Options for treatment of PHN if it develops include:

- Topical lidocaine cream plus tricyclic antidepressants;
- Amitriptyline 50 mg nocte or
- Carbamazepine 200 mg every night.

Systemic steroids and antivirals may prevent loss of sight from uveitis and keratitis.

Molluscum Contagiosium

This is an infection caused by the poxvirus and is acquired sexually or through direct contact. It presents as small painless elevated round pearly white nodules about 2-4 mm in size around the eyes. Central umbilication is pathognomonic and differentiates it from other nodules of similar appearance[3]. Inflammation of the conjunctiva and cornea may occur as a complication. Disseminated lesions may occur in severe immune-suppression. Single or isolated lesions can be treated by curettage, excision or cryotherapy. Disseminated lesions can be treated by oral acyclovir. Reconstitution of immune function with HAART can result in resolution of molluscum contagiosium lesions without concurrent use of specific therapy.

Ocular Adnexal Tumours

Kaposi Sarcoma

Kaposi Sarcoma is a malignant vascular tumour caused by Human Herpes Virus 8 (HHV-8)[4] that was originally reported in elderly males of Mediterranean origin and Jewish ancestry. It affects skin, mucus membrane, internal organs and lymph nodes. Ocular Kaposi Sarcoma (figure 2) presents on the lid or conjunctiva as a painless diffuse violet nodule. Prior to the advent of the AIDS epidemic, ocular Kaposi Sarcoma was a rare entity reported in less than 30 cases worldwide. It is now one of the commonest malignant tumours in AIDS patients and not uncommonly the first manifestation of infection with the HIV virus.

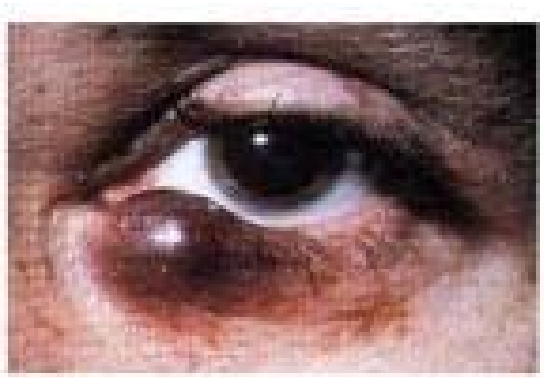

Figure 2. Kaposi Sarcoma of the lid presenting as a purple nodule

The main postulated mode of transmission is sexual[5] although vertical transmission from mother to child is thought to be common in sub-Saharan Africa[6,7] where the disease is endemic. Multiple factors may interact with HIV to cause Kaposi Sarcoma. This includes deregulated expression of oncogenes, decreased immune surveillance and release of *Cytokines* and *Growth factors* by the action of HIV upon infected cells. Although science is still far from understanding the mechanism by which HHV-8 causes oncogensis, some viral oncogenes believed to contribute to neoplasia have been isolated. Latency Associated Nuclear Antigen (LANA) encoded by HHV-8 genome is a protein consistently shown to be expressed in HHV infected cells. LANA interacts with tumour suppressor genes in a manner that promotes oncogensis. Treatment may include surgical resection. Regression may be achieved with radiotherapy or chemotherapy with Bleomycin

Squamous cell carcinoma of the conjunctiva (SCC)

SCC is the most common malignancy of the conjunctiva. The incidence of the indolent form of this disease has been shown to decline as one travels away from the equator. Thus in Uganda, an incidence of 1.2/100,000 persons/year has been reported compared to 0.02/100,000 persons/year in the UK which is further north of the equator[8]. The most common presentation is that of a friable white or pigmented nodule at the junction of the sclera with cornea (figure 3). This form of the tumour presents mainly in elderly African males who spend many hours in the sun working on farms or other occupations. Fair skin pigmentation, UV radiation and atopic eczema are the main risk factors for this form of SCC. It rarely invades the eyeball or adjacent structures and death is uncommon. Margin free surgery followed by cryotherapy or radiation has 100% cure rate. Recurrent lesions are treated with topical Mitomycin C, 5FU or interferon Alpha[9]

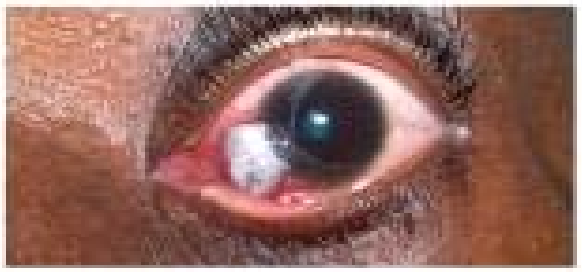

Figure 3. Squamous cell carcinoma of the conjunctiva presenting as a white mass with rough friable surface

An aggressive form of SCC has recently been described in young adults less than 50 years of age in whom the disease progresses relentlessly, invading the eyeball, orbit and adjacent adnexial tissue[10] and metastasising to regional lymph nodes[11]. Studies in Rwanda, Malawi and Uganda[12] have found high association of HIV with this form of SCC. In Zimbabwe, a nine-fold increase in cases from six cases/million to 35 cases/million in less than 5 years has been recorded since the onset of the HIV epidemic[13]. High titres of Human Papilloma Virus (HPV) type 16, 18 have been found in association with this tumour, raising the possibility that it may be caused by an infectious agent. It is not known precisely how HIV interacts with HPV and other oncogenic viruses to cause the aggressive form of this disease.

Theories abound that HIV directly induces neoplastic change in tissue by secreting viral oncogenes that inactivates tumour suppressor gene products secreted by host tissues, thereby promoting oncogensis. Integration of viral genome into host tissue is also postulated to lead to neoplastic transformation.

HIV induced immune suppression may reduce immune surveillance thereby priming the tissue for malignant transformation as has been the case in liver transplant patients who receive Azothriopine therapy[14]. HPV is known to increase the activity of *Transforming growth factor Beta* (TGFβ) which promotes differentiation and neoplastic transformation of cells. Pan activation of humeral immune system and increase in Cytokine release leads to a chronic inflammatory state that facilitates malignant transformation[15].

If the tumour is diagnosed early before it infiltrates the eyeball or conjunctiva of the lid, wide excision has 100% cure rate. A tumour that is fixed to the eyeball should be treated by enucleation of the eye to prevent lid invasion and subsequent systemic spread through vascular and lymphatic route. In Sakubva Eye Unit, Mutare, SCC is the commonest cause of enucleation of the eye in adults and a frequent cause of death from eye related disease among HIV patients. Early diagnoses followed by wide excision or enucleation can relieve pain and improve the quality of life of affected patients

Other conditions associated with HIV

Anterior Uveitis

Inflammation of the uveal tract (iris, ciliary body and choroid) is a common anterior segment manifestation of HIV. It is seen in up to 88% of HIV patients in Zimbabwe. Viral infections, tuberculosis and syphilis are the common etiological agents of infectious uveitis in HIV patients. In some cases, it is the initial presentation in undiagnosed patients. Idiopathic uveitis may occur in the background of immune reconstitution syndrome. This occurs when a patient whose cell mediated

immunity is being reconstituted as a result of treatment with HAART begins to develop uveitis as a part of autoimmune disease. Patients with uveitis will present with pain, photophobia, reduced vision and redness of the involved eye. Etiologic diagnosis can be made by examination of aqueous by use of polymerase chain reaction (PCR).

Secondary Cataract

We have seen and operated on young HIV positive patients in their early twenties who present with lens opacities that morphologically resemble juvenile cataract. These patients have no other associated conditions such as anterior iritis that would have accounted for their cataract. HIV induced lens changes may be responsible for this type of cataract. HIV virus has been isolated in lens tissue of patients with cataract. Visual prognosis following cataract surgery is good in this group of patients. Early surgery is important to prevent development of complications and to assure visual recovery, which will in turn help these patients to care for themselves and participate in the treatment of their illness.

References

1. Ikoona E, Kalyesubula I and Kawuma M. *Ocular manifestations in paediatric HIV/AIDS patients in Mulago Hospital, Uganda*, Afr Health Sci. 2003 August; 3(2): 83–86
2. Beare NAV, Kublin JG, Lewis DK, Schijffelen MJ, Peters RPH, Joak GI, Kumwenda J, and Zijlstra EE *Ocular disease in patients with tuberculosis and HIV presenting with fever in Africa.* Br J Ophthalmol. 2002 October; 86(10): 1076–1079.
3. Gordon JJ, Darwin CM, Robert AW, Sheila KW. *The Epidemiology of eye disease,* 2nd Edition. Oxford University Press Inc 198 Madison Avenue New York NY 10016 318-340
4. Kanski JJ,Menon J. *Clinical ophthalmology* 5th edition 2001 Butterworth Heinmann India
5. Martin JN, Ganem DE,Osmond DH, et al: *Sexual transmission and natural history of Human Herpesvirus-8 infection.* N Engl J Med 338:948-54 1998
6. Malope B, Pfeiffer RM, Mbisa G et al: *Transmission of Kaposi Sarcoma associated herpesviruses between mothers and children in South Africa population.* J aquir Immune defic Syndr 44:351-5, 2007
7. Mbulaiteye S, Marshall V, Bangi RK et al. *Molecular evidence for mother to child transmission of Kaposi Sarcoma associated herpesvirus-8 in Uganda and K1 gene evolution within the host.* J Infect Dis 193: 1250-7' 2006
8. Newton R, Ferlay J, Reeves G, et al *Effect of ambient solar radiation on the incidence of squamous cell carcinoma of the eye.*. Lancet 347: 1450-1 1996
9. Shields CL, Naseripour, Shields JA. *Topical Mitomycin C for extensive recurrent conjunctival corneal squamous cell carcinoma.* AM J Ophthalmol 133: 601-66, 2002
10. Erie JC, Campbell RJ, Liesegang TJ; *Conjunctival and corneal intraepithelial and invasive neoplasm.* Ophthalmology 93: 176-83, 1986
11. Tunc M, Char DH, Crawford B,et al; *Intraepithelial and invasive squamous cell carcinoma of conjunctiva.* Br J Ophthalmol 83: 98-103' 1999
12. Orem J, Otieno MW, Remick SC; *Challenges and opportunities for treatment and research of AIDS related malignancies in Africa.* Curr Opin Oncol 18: 479-86, 2006
13. Chokunonga E, Levy LM, Basset MT, et al *AIDS and cancer in Africa. The evolving epidemic in Zimbabwe.* AIDS 13: 2582-8, 1999
14. Shehil AE, Shields CL, Shields JA, et al *Aggressive conjunctival squamous cell carcinoma in a patient following liver transplant.* Arch Ophthalmol 121; 280-2, 2003
15. Dalgleish AG, O'Byrne K, *Chronic immune activation and inflammation in the pathogenesis of AIDS and cancer* Adv cancer res 84: 231-76, 2002

Thanks to Michele Marcoux for converting the images.

A new email forum

en-net is a new free online forum for people working in emergency nutrition and food security. The forum aims to provide fast access to support and guidance on challenging issues, prompt technical advice, and space for informal discussions and links to key resources. Users can receive email notifications of new postings, or simply visit the site to view and participate in 'question and answer' discussions.

en-net is managed by the **Emergency Nutrition Network** www.ennonline.net and supported by USAID/OFDA. Join **en-net** by going to its website at www.en-net.org.uk.

March 8 2009 was **International Women's Day** with theme of 'Women and men united to end violence against women and girls." We hope to have some articles on this topic this soon.

Did you know?

A woman in South Sudan has a one in six chance of dying during the course of her lifetime from complications during pregnancy or delivery, according to the UN Children's Fund (UNICEF). Sudan's overall maternal mortality ratio is 1,107 deaths per 100,000 live births, but rates are far higher in the South, rising to 2,243 deaths per 100,000 live births, according to UNICEF.

Diabetes

Part 1. Definition, Diagnosis and Prevention

Victor Lawrence[a] BSc, MB BS, MRCP, Consultant Physician, The Arun Baksi Centre for Diabetes and Endocrinology, St Mary's Hospital, Isle of Wight PO30 5TG, UK

Introduction

Western countries are experiencing an explosion in the prevalence of type 2 diabetes (T2DM) linked to increasing obesity and a steady year on year rise in the incidence of type 1 diabetes (T1DM) in children. However, for reasons that are not currently understood, the situation in Sub-Saharan Africa is less clear. Many factors contribute to this. Problems reported in other African countries include:

- failure of patients to present to health care facilities (either because of rapid death in T1DM or lack of clear symptoms in T2DM sometimes linked to malnutrition);
- targeting of acute infection rather than less cost effective long term conditions in healthcare prioritisation and
- problems with the reliable supply, affordability and storage of insulin, other medications and the means to monitor treatment (e.g. finger prick blood testing).

Some population studies in Africa have suggested that type 1 diabetes is a rare condition. Sadly, this is more likely to be due to the fact that those affected die undiagnosed within a few weeks and so are rarely counted. Some studies have suggested under-diagnosis even amongst patients presenting to hospital with ketoacidosis.

In spite of this, we know that diabetes is a common condition affecting perhaps 2-6% of most populations and its under-diagnosis and under-treatment leads to rapid death in T1DM and to unnecessary suffering and premature death in T2DM. This article aims to:

- increase awareness of the condition;
- discuss symptoms and diagnostic criteria;
- consider screening and prevention of diabetes;
- point the reader in the direction of more detailed open access information (see references below).

The management of diabetes will be discussed in the next issue of the Bulletin

Definition of diabetes

Diabetes is a disorder of the regulation of blood glucose. The World Health Organisation (WHO) defines diabetes on the basis of an oral glucose tolerance test (OGTT) (Table 1). The American Diabetes Association (ADA) defines diabetes and impaired fasting glucose on the basis of fasting plasma glucose (FPG) only - which may be more cost effective as a screening tool (Table 2) - usually reserving OGTT to patients with abnormal fasting glycaemia.

Type 1 diabetes is characterised by an absolute deficiency of insulin and type 2 diabetes by resistance to insulin action. Most commonly (approximately 80% of the time), T1DM presents in childhood with rapid (few weeks) weight loss, lethargy, polyuria, polydipsia, blurred vision, ketosis (acetone on breath, not always detectable) and profound dehydration or shock.

Type 2 diabetes usually affects older individuals, especially if obese, and has a more insidious onset with fatigue, polyuria, polydipsia, weight loss and infections (e.g. boils, candida). If the disease is not recognised, it may present at a later stage with established diabetic complications including renal failure, peripheral neuropathy or diabetic retinopathy or cataract. Some secondary causes of diabetes (that is, diabetes being secondary to another illness or condition) occur commonly in populations where alcohol is abused or malnutrition is common (Table 3).

[a] victor.lawrence AT iow.nhs.uk

Table 1. Values for diagnosis of diabetes mellitus and other categories of hyperglycaemia (WHO)

Condition	Glucose concentration, mmol l^{-1} (mg dl^{-1})		
	Whole blood	Whole blood	Plasma*
	Venous	Capillary	Venous
Diabetes Mellitus:			
Fasting	>=6.1 (>=110)	>=6.1 (>=110)	>=7.0 (>=126)
or			
2-h post glucose load	>=10.0 (>=180)	>=11.1 (>=200)	>=11.1 (>=200)
or both			
Impaired Glucose Tolerance (IGT):			
Fasting (if measured)	<6.1 (<110)	<6.1 (<110)	<7.0 (<126)
and			
2-h post glucose load	>=6.7 (>=120) and <10.0 (<180)	>=7.8 (>=140) and <11.1 (<200)	>=7.8 (>=140) and <11.1 (<200)
Impaired Fasting Glycaemia (IFG):			
Fasting	>=5.6 (>=100) and <6.1 (<110)	>=5.6 (>=100) and <6.1 (<110)	>=6.1 (>=110) and <7.0 (<126)
and (if measured)			
2-h post glucose load	<6.7 (<120)	<7.8 (<140)	<7.8 (<140)

Table 2. Criteria for the diagnosis of diabetes mellitus (ADA)

1. Symptoms of diabetes plus casual plasma glucose concentration >11.1 mmol/l (200 mg/dl). Casual is defined as any time of day without regard to time since last meal. The classic symptoms of diabetes include polyuria, polydipsia, and unexplained weight loss.

OR

2. Fasting plasma glucose (FPG) >7.0 mmol/l (126 mg/dl). Fasting is defined as no caloric intake for at least 8 h.

OR

3. 2-h post-load glucose 11.1 mmol/l (200 mg/dl) during an OGTT. The test should be performed as described by WHO, using a glucose load containing the equivalent of 75 g anhydrous glucose dissolved in water.

In the absence of unequivocal hyperglycemia, these criteria should be confirmed by repeat testing on a different day. The third measure (OGTT) is not recommended for routine clinical use.

Insulin resistance in comparison to insulin deficiency

It is important to recognise that many individuals are hard to define as having pure insulin resistance or pure insulin deficiency particularly in the secondary forms of diabetes (Table 3). Clinical judgement, testing of urine ketones and monitoring of the response to treatment (e.g. blood glucose levels, HbA1c, weight and general wellbeing) is required to determine whether insulin treatment will be required from the outset, later on or not at all. Many patients who are initially treated as type 2 diabetes with oral hypoglycaemic agents (OHAs) will later require insulin, and some requiring insulin for treatment of HHS (see below) will later be adequately managed on tablets and diet alone.

Table 3. Etiological Classification of Diabetes Mellitus (simplified classification based on WHO)

I. Type 1 diabetes (ß-cell destruction, usually leading to absolute insulin deficiency)
A. Immune mediated
B. Idiopathic
II. Type 2 diabetes (may range from predominantly insulin resistance with relative insulin deficiency to a predominantly secretory defect with insulin resistance)
III. Other specific types
A. Genetic defects of ß-cell function (MODY, mitochondrial disorders, other)
B. Genetic defects in insulin action (e.g. Leprechaunism, congenital lipoatrophic disorders)
C. Diseases of the exocrine pancreas (e.g. pancreatitis, trauma, pancreatectomy, neoplasia, fibrocalculous pancreatopathy)
D. Endocrinopathies (e.g. acromegaly, Cushing's syndrome, thyrotoxicosis)
E. Drug- or chemical-induced (e.g.glucocorticoids, thiazides, phenytoin, antiretroviral therapy)
F. Infections (e.g. Congenital rubella, Cytomegalovirus, HIV/AIDS)
G. Uncommon forms of immune-mediated diabetes (e.g. anti insulin receptor antibodies)
H. Other genetic syndromes sometimes associated with diabetes (e.g. Prader-Willi syndrome)
IV. Gestational diabetes mellitus (GDM)
Modified from WHO Study Group on Diabetes Mellitus
http://www.who.int/diabetes/publications/Definition%20and%20diagnosis%20of%20diabetes_new.pdf

Diagnosis and screening

Diagnosis in acute settings

Many patients will present to a hospital with a metabolic emergency: diabetic ketoacidosis (DKA) in T1DM or hyperosmolar hyperglycaemic syndrome (HHS, previously sometimes called HONK) in T2DM. Secondary forms of diabetes may take either form. Patients with long standing type 2 diabetes commonly lose the ability to produce insulin over time and require insulin treatment in spite of having previously been well controlled with dietary modification or oral hypoglycaemic agents (OHAs) such as sulphonylureas or metformin. Excellent guidance in the treatment of these conditions, and many other aspects of diabetes is provided by the ADA with open access online (see references below).

Diabetic ketoacidosis

The clinical features of DKA include dehydration, shock, vomiting, abdominal pain, acidosis (with Kussmaul breathing or, in some cases, ketones on the breath), and cerebral impairment. Biochemical features of ketoacidosis include hyperglycaemia, ketosis (ketonaemia and ketonuria), metabolic acidosis and uraemia. Creatinine concentrations may not be accurately measurable in the presence of heavy ketonaemia. Typical blood results in DKA are shown in Table 4.

Table 4. Typical initial laboratory values in diabetic ketoacidosis

Plasma [glucose] = 37mmol/L
Plasma [K^+] = 5.3mmol/L:whole body depletion typically 6.0 mmol/kg body weight
Plasma [Na^+] = 131 mmol/L: whole body depletion typically 8.0 mmol/kg body weight
Plasma [urea] > 15 mmol/L
Plasma [creatinine]> 150µmol/L (if possible to measure in the presence of heavy ketonaemia)
Plasma [ketones] >15 mmol/L
Plasma [Mg^{2+}] <0.70 mmol/L: whole body depletion typically 0.5 mmol/kg body weight
Plasma [P_i] >1.2 mmol/L: whole body depletion typically 1.0mmol/kg body weight
Serum amylase 500-1000 IU/L
Serum osmolality = 323 mmol/kg
Whole body water depletion 75-100 mL/kg body weight = 7L in typical adult
Arterial blood gases
[H^+] > 50 nmol/L (pH <7.30)
P_aCO_2 = 3.2kPa
P_aO_2 > 12kPa
[HCO_3] <18mmol/L
Anion gap ([Na^+] + [K^+]) – ([$C1^-$] + [HCO_3^-]) > 20 mmol/L

The key to successful management is, of course, recognition of the condition in the first place and early institution of fluid, electrolyte and insulin replenishment.

Hyperosmolar hyperglycaemic syndrome
HHS typically presents with very high blood glucose levels, severe dehydration, altered mental status and electrolyte disturbance in older individuals with type 2 diabetes. The condition is commonly associated with another intercurrent illness which should be suspected and diagnosed (e.g. infection, stroke). Ketonuria is light or absent although a type A lactic acidosis may be present in more severe cases as a result of shock. Treatment is broadly similar to DKA although slower rates of fluid resuscitation and insulin infusion are usually appropriate in these typically more frail individuals.

In both DKA and HHS it is important to monitor serum electrolytes, particularly Na+ and K+ at diagnosis and in response to treatment. Details of the treatment are on the ADA website.

Diagnosis in other settings

It is important to recognise that diabetes may present in other settings than those outlined above. For example, patients with uncontrolled diabetes may fail to recover well from surgical procedures because of poor wound healing (fibroblast function) and susceptibility to infection (neutrophil function). Patients at risk should ideally be identified and treated to prevent surgical mishap. Similarly, patients with diabetes are more at risk of developing a range of other infections. This possibility should be remembered particularly where an individual has a history of recurrent skin and superficial infections or urinary tract infection without other precipitant.

Pregnancy
Pregnancy is another setting where patients not known to have diabetes may present for medical care. It is particularly important to diagnose diabetes because of a serious potential threat to the health of both mother and child if the condition is not recognised and treated appropriately. Diabetes in pregnancy may be pre-existing (already diagnosed type 1 or type 2 diabetes) or gestational.

Gestational diabetes mellitus (GDM) is defined as any form of disturbance of blood glucose regulation with onset or first recognition during pregnancy. Most often, this will mean a form of diabetes developing at around 26-28 weeks gestation and remitting at birth. However, sometimes a pregnant woman has type 1 or type 2 diabetes which will, of course, not remit at delivery. Clues to this include symptoms of diabetes which pre-date the onset of pregnancy or a proven gluco-regulatory disturbance developing before the 26th week of gestation.

Women with pre-existing diabetes should ideally:
- plan their pregnancies so that control of blood glucose may be optimised prior to conception (ideally, FPG 3.5- 5.9 mmol/l and 1 hour post prandial capillary blood glucose <7.8 mmol/l) and
- take folic acid 5 mg prior to conception and up to the end of the first trimester.

Poor control of pre-existing diabetes may be associated with a 10 fold or higher incidence of major congenital anomalies (typically cardiac or neural tube defects). DKA during pregnancy is usually fatal to the foetus and frequently to the mother.

Suspect gestational diabetes when the risk factors listed in Table 5 exist although the precise screening programme should reflect the prevalence of the disorder and resources available for its diagnosis and treatment.

Table 5. Risk factors for GDM

History of a large baby (e.g. over 4.0 kg)
Family history of diabetes in a first degree relative
Obesity
Unexplained previous late foetal loss
Older mother (e.g. over 30)
Previous gestational diabetes

Prevention

Type 1 diabetes is not thought to be preventable at the current time. Immunosuppressant therapy has been tried in the past with some success but the dangers of such treatment generally outweigh the benefits. Many cases of type 2 diabetes are however preventable with good diet, maintenance of normal weight and healthy amounts of exercise. Some studies have shown an additional effect of metformin in addition to these measures although this is not a substitute for a healthy lifestyle. People at risk from diabetes will usually have a family history of the condition, be overweight/obese or both. For example, the risk of type 2 diabetes for a woman with BMI >35 [kg.m-2] is approximately 93 times that of a lean woman. Centrally distributed adiposity carries an independent additional risk.

However, not all obese people have diabetes and genetic factors (most easily assessed by family history) are thought to play a significant part. Women with a history of gestational diabetes carry a 50% lifetime risk of diabetes. Where resources for screening are available, the groups likely to have the

highest undiagnosed prevalence of diabetes are those with obesity and women with a history of gestational diabetes

References and further reading

The following freely accessible on-line resources provide a wealth of further information and links to other relevant sites:

- American Diabetes Association (ADA*) Clinical Practice Guidelines* http://www.diabetes.org/ for-health-professionals-and-scientists/cpr.jsp
- ADA *Guidelines on Diabetic Emergencies* http://care.diabetesjournals.org/cgi/content/full/27/suppl_1/s94
- National Diabetes Information Clearing House http://diabetes.niddk.nih.gov/

See also items on page 17.

Juba needs more wheelchairs

Disabled persons in Juba have no access to organised Rehabilitation Services at Juba Teaching Hospital. These include people disabled by stroke, falls from mango trees, poliomyelitis, limb amputations or road traffic accidents (resulting from badly maintained vehicles and the large number of motorcycles which mingle with 4X4 vehicles on unmarked potted non tarmac roads).

There are only two physicians and a competent surgeon - none of whom has the training or a specialist interest in Rehabilitation Medicine. There are no occupational therapists, speech and language therapists or physiotherapists as we know them in the United Kingdom.

The Acute Medical services are overstretched and the Physiotherapy service is not equipped with basic facilities such as parallel bars and exercise bicycles. The physiotherapists are upgraded medical or clinical officers. The beds on the wards have no wheels and so patients with limb weakness cannot be transferred from one ward to the other, or to the Physiotherapy Department except on the few theatre trolleys. The Emergency Medical ward has just one wheelchair - shown on the front cover of this Bulletin. Patients who have not recovered the full function of their limbs after treatment in the acute wards have to be lifted by relatives to transfer them from bed to toilet or chair.

As well as the need for wheelchairs in hospital, disabled people need wheelchairs in their homes. This would ease the burden of caring for them, give the disabled persons freedom of movement and release relatives to carry out other household chores.

Juba Teaching Hospital would be pleased to hear from any Organisation that can provide wheelchairs or help to set up a wheelchair service as part of a comprehensive Rehabilitation service.

Please contact Dr.Eluzai Hakim on eluzai_hakim@yahoo.co.uk or by letter at Department of Adult Medicine & Rehabilitation, St.Mary's Hospital, Newport, Isle of Wight,PO30 5TG, UK; Tel +44 1983 534871

Feeding infants whose mothers are HIV-positive

Feeding from birth to 6 months

The way a HIV+ mother feeds her baby affects the child's risk of:

- Becoming infected with HIV
- Dying from other infections.

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Table 1 shows that the risks to the baby of exclusive breastfeeding (i.e. being infected with HIV) must be balanced against the risks of giving infant formula (i.e. dying from other infections and malnutrition). In Southern Sudan most families cannot safely formula feed. The milk is expensive and making hygienic feeds is difficult.

So the safest choice for most babies born to mothers with HIV is exclusive breastfeeding for the first 6 months. Among the many well-known advantages of breastfeeding is the reduction of HIV-associated stigma.

The risks of transmission during exclusive breastfeeding in the first 6 months are:

- Decreased when:
  - the mother and/or baby are on ART
  - the baby really *does not have anything* else to eat or drink.
- Increased when:
  - the mother has AIDS, a low CD4 count, cracked nipples, mastitis or a breast abscess or is infected with HIV immediately before or during breastfeeding
  - the baby has mouth sores.

Table 1 Approximate risk of 0-6 month old babies whose mothers are HIV+ becoming HIV infected or dying from other infections in low-income areas[1]

Type of feeding	Risk of postnatal HIV infection	Risk of dying from other infections
Exclusive breastfeeding	Low	Very low
Infant formula only	Nil	Very high
Breastfeeding + formula	High	Medium
Breastfeeding + food	Very high	Medium

Note: Infant formula, animal milks and family foods can irritate and inflame the gut so that HIV can more easily invade the body.

Counselling

Before a baby is born make sure that both parents, and/or other relatives and caretakers (as well as any health promoters giving advice) understand:

- The risks, costs and advantages of different feeding methods
- That, except for breastmilk, **any food or drink** taken before the age of 6 months may injure the baby's young gut in different ways and cause diarrhoea, allergies, etc.
- That mixed feeding (i.e. breastmilk with any other food, drink or formula) is the worst option as HIV can easily invade an injured gut.

Exclusive breastfeeding

- At antenatal visits: emphasise:
  - the importance of **exclusive** breastfeeding for 6 months and the dangers of mixed feeding.
  - that all lactating mothers, especially those who are HIV+, have high energy and nutrient needs and so must eat more healthy foods than usual.
- After delivery:
  - check that the baby is suckling in the correct position as this lessens the risk of breast-related problems. If these occur (e.g. cracked nipples, engorgement, mastitis) tell the mother to seek treatment quickly
  - teach the mother how to identify thrush and mouth sores in the baby. If these occur treat immediately with gentian violet or nystatin cream
  - advise the mother not to force breastfeeding if the baby refuses but to seek advice. The baby may be sick or have a congenital problem. Check the baby and ask if s/he has the normal cycle of 'suckle-sleep-cry-suckle-sleep' or has an abnormal cry and sleeping cycle.

Replacement feeding

If the mother decides not to breastfeed *and* the family is able to buy and safely prepare sufficient amounts of a suitable breastmilk substitute:

1. Make sure that mother and her family know:
   - The dangers of mixed feeding (i.e. breastmilk + other milk and/or food).

- That infant formula provides a better balance of nutrients (including micronutrients) than home-modified animal milks. Sweetened condensed milk and undiluted animal milks are not suitable for feeding babies under 6 months.
- How to safely prepare the feeds and feed with a cup.

2. Follow up and monitor the child's weight often, especially during the first weeks. Tell the family to seek early treatment if the baby is ill.
3. Advise the parents about family planning. If the mother breastfed previous infants, she may not realise that artificial feeding puts her at risk of another pregnancy sooner.

If the mother is dead or severely ill, try to provide the family with infant formula, demonstrate how to prepare and feed it, and monitor the baby as closely as possible.

Feeding from 6 – 12 months

Recent studies indicate that for many babies in resource-poor homes stopping breastfeeding carries a higher risk of death (from infection and malnutrition) than continuing to breastfeed[2]. They also suggest that the risk is transmission is lower if the mother and baby are on ART[3, 4].

Counselling

At the age of 6 months all children need other (complementary) foods in addition to breastmilk or formula – see Box 1.

If the infant is breastfeeding

1. If the infant is HIV+, advise starting complementary foods and continuing to breastfeed until the child is at least 2 years old.

2. If you do not know the HIV status of an HIV-exposed breastfeeding infant, assume s/he is HIV- and discuss different feeding options. *Only* advise stopping breastfeeding at 6 months if:
   - The baby is well and can be weighed regularly
   - The family can:
     - provide sufficient suitable milk as well as other foods and can prepare them safely.
     - reach a health centre quickly if the baby is ill or not gaining weight.

For many infants the safest choice may be to start complementary/family foods (see Box 1) **and continue breastfeeding until 12 months of age and then stop.** At this age the risk of death from diarrhoea and common infections decreases.

If the infant is not breastfeeding

Make sure the family knows:

- That non-breastfed babies are at risk of serious infections and malnutrition. They should take the infant for regular weighing/health checks and seek medical help quickly if the child is ill or not gaining weight
- How to feed the infant – see Box 1.

Box 1. Feeding infants aged 6-12 months[5]

All infants have small stomachs and need to eat energy/nutrient-rich meals or snacks about 4-6 times a day, in addition to some type of milk. As well as thick porridges they need:

- **Meat, poultry, fish or eggs** whenever possible.
- **Legumes (e.g. beans) and oil seeds (e.g. groundnuts)**
- **Plenty of fruits and vegetables**
- **Fat-rich foods** (e.g. oil, groundnuts) that provide about 1-2 tablespoons fat/day

If children are not breastfed they also need:

- **Full-fat milk** 300 – 500 ml of boiled (or safely fermented/soured) animal milk each day.

All infants need regular vitamin A supplements, some need iron and HIV-exposed infants many need food supplements.

References

1. Greiner T. in *Chapter 7, Community Nutrition.* Chapter 7, Macmillan, Oxford 2009.
2. Kuhn L etal *Effects of early, abrupt weaning on HIV-free survival of children in Zambia.* N Engl J Med, 359(2): 130-41. http://www.womenchildrenhiv.org/wchiv?page=wx-resource&rid=21034 2008
3. Smart T. *Low rates of HIV transmission in breastfeeding women on ART.* 4th International AIDS Society Conference on HIV Pathogenesis, Treatment and Prevention in Sydney. www.aidsmap.com 2007.
4. Thaczuk D. & Safreed-Harmon K. *ART use in mothers with low CD4 cell counts reduces breastfeeding transmission fivefold: Malawi* . Sixteenth Conference on Retroviruses and Opportunistic Infections. AIDSMAP NEWS www.aidsmap.com February 12, 2009
5. WHO *Complementary feeding of breastfed children* WHO, Geneva. 2000.

Website:

WHO 2006 statement and report of Expert Consultation on HIV and Infant Feeding with references to more recent research at http://whqlibdoc.who.int/publications/2007/9789241595964_eng.pdf

This article is based on information in chapters 6 and 7 of 'Community Nutrition', Macmillan Education 2009.

Thanks to Dr Hanifa Bachou, MwanaMigimu Nutrition Unit, Kampala and Dr Louis Danga, Juba Teaching Hospital for their comments and inputs.

Reports from Southern Sudan

Outbreak of Acute Watery Diarrhoea (AWD) in Northern Bahar El Ghazal State

Médecins sans Frontières in Southern Sudan has responded to an outbreak of AWD in Northern Bahr El Ghazal State in collaboration with the GOSS MOH, SMOH in Aweil Civil Hospital and health structures around the area. Heavy rains contributed to the spread of AWD. Rains have stopped but, cholera being endemic in the area, sporadic cases are still reported among the populations in most of the counties.

MSF supported the outbreaks in Wathok, Aweil Town, Wanjok PHCU, Akuem Hospital and Pariak PHCU and, to limit the spread of the disease, opened CTUs in Aweil East in Peth and Gueng Kou; other agencies opened CTUs in Maluakon or Madiang Awar.

Between July 2008 and January 2009, 7265 people (of which 1238 were severe cases) consulted or were admitted to MSF supported health structures – the majority of severe cases being seen in Peth.
Extract of a report from MSFF Southern Sudan in January 2009. More details from msff-juba-hom@paris.msf.org

Polio outbreak in Southern Sudan

The outbreak started in 2008 with 24 case, in eight states, excluding Northern and Western Bahr el Gazal. In March 2009, the virus was still circulating with 16 cases reported in Lakes, Unity, Jonglei, Eastern Equatoria and Western Equatoria states. In order to interrupt the circulation, and stop the outbreak, all partners and NGOs are requested to join the Ministry of Health and help to implement the coming campaign to insure that all children less than five years of age received polio vaccine.
Extracted from item posted on the South Sudan Health Forum by *Dr. Anthony Laku Stephen, MOH, GOSS 19 March 2009*

Extracts from Journals, etc.

Please send us more material for future issues of the Bulletin.

Untreated HIV depletes CD4 cells in semen - renders men more vulnerable to STIs

Investigators report that HIV infection causes a rapid depletion of immune cells in semen. This immune depletion could render HIV-positive men more vulnerable to sexually transmitted infections, and such infections can increase the risk of onward HIV transmission. However, investigators also found that HIV treatment leads to the restoration of immune system cells in semen

Politch, J.A. et al. Depletion of CD4+ T cells in semen during HIV infection and their restoration following antiretroviral therapy. J Acquir Immune Defic Syndr (online edition), 2009.

HIV treatment during pregnancy does not increase risk of birth abnormalities - even when efavirenz is included

HIV treatment during pregnancy does not increase the risk of birth abnormalities. Researchers from the UK and Ireland looked at the outcome of over 8000 pregnancies in HIV-positive women over a 17 year period and found that the rate of birth abnormalities was the same as that seen in the general population.
Townsend, CL et al. Antiretroviral therapy and congenital abnormalities in infants born to HIV-infected women in the UK and Ireland, 1990-2007. AIDS 23 (online edition), 2009.

Optimal testing strategy for infants at risk for MTCT in the late postnatal period

A recent survey concluded that in resource-limited settings, HIV-1 PCR testing at 4-8 weeks followed by a second test at 1 month after weaning or at 1 year of age (whichever comes first), led to the identification of the vast majority of HIV-1-infected infants.
Brown E etal 'Determining an optimal testing strategy for infants at risk for mother-to-child transmission of HIV-1 during the late postnatal period' AIDS. 2008 Nov 12; 22(17): 2341-6.

Simultaneous treatment of HIV and TB improves survival

Starting treatment for both HIV and tuberculosis at the same time lowers the risk of death by around 65% in comparison with deferring HIV treatment for at least three months. The finding adds evidence to the current debate around co-treatment of the two infections.
Velasco M et al. Effect of simultaneous use of highly active antiretroviral therapy on survival of HIV patients with tuberculosis. J Acquir Immune Defic Syndr 50:148 – 152, 2009

Antiretroviral Therapy Exposure and Insulin Resistance in the Women's Interagency HIV Study

Evidence suggesting an increased risk of cardiovascular disease in HIV-infected individuals has heightened the need to understand the relation of HIV infection, antiretroviral therapy use, and non-HIV-related factors with insulin resistance (IR).
Methods: Prospective study of 1614 HIV-infected and 604 HIV-uninfected participants from the Women's Interagency HIV Study between October 2000 and March 2007. Homeostasis model assessment (HOMA)-estimated IR at 11,019 semiannual visits.

Results: HIV-infected women reporting highly active antiretroviral therapy (HAART) had higher median HOMA than HIV-uninfected women. Among HIV-infected, cumulative exposure to nucleoside reverse transcriptase inhibitors (NRTIs) of >3 years was associated with HOMA 1.13 times higher than the HOMA without any cumulative NRTI exposure. Cumulative exposure to the NRTI stavudine of >1 year was associated with HOMA 1.15 times higher than the HOMA without any cumulative stavudine use. Family history of diabetes, hepatitis C virus seropositivity, higher body mass index, or reporting menopause was associated with higher HOMA. *Conclusion:* Longer cumulative exposure to NRTI; in particular, stavudine is associated with greater insulin resistance in HIV-infected women.
Tien P.C etal J Acquir Immune Defic Syndr. 2008 Dec 1; 49(4): 369-76

Breastfeeding in HIV-positive mothers in Botswana did not affect mortality

A controlled, randomised, prospective trial of 1200 HIV-positive mothers in Botswana found no differences in mortality between women who breastfed and those who formula fed. A trend toward faster declines in CD4 cell count began to emerge several years after cessation of breastfeeding, but this was not statistically significant and its significance is unknown.
Lockman S et al. The effect of breast feeding vs formula feeding on maternal HIV disease progression, mortality, and micronutrient levels in a 1200-person randomized trial, Botswana. Sixteenth Conference on Retroviruses and Opportunistic Infections, Montréal, abstract 176, 2009. From aidsmap news: February 24th 2009 aidsmapnews@nam.org.uk

ART use in mothers with low CD4 cell counts reduces breastfeeding transmission fivefold: Malawi

The use of antiretroviral therapy (ART) by breastfeeding mothers greatly reduced the risk of HIV transmission to their infants after a 14-week course of infant HIV prophylaxis was stopped, according to a study performed in Malawi and presented to the Sixteenth Conference on Retroviruses and Opportunistic Infections. However, ART use did not significantly reduce transmission risk in mothers with CD4 cell counts above 250 cells/mm^3.
From aidsmap news: February 24th 2009 aidsmapnews@nam.org.uk

Association of HIV and malaria with mother-to-child transmission, birth outcomes, and child mortality

The objective was to assess the impact of HIV and malaria coinfection on mother-to-child HIV transmission (MTCT) and adverse birth outcomes. 109 HIV-positive mother-infant pairs with a malaria diagnosis were identified in a community cohort (Uganda) and followed up postpartum. Maternal malaria was diagnosed by a rapid immunochromatographic test on sera and histopathologic examination of placenta. Infant HIV was diagnosed within 6 weeks of birth using polymerase chain reaction to capture in-utero and intrapartum HIV transmission. Log binomial models were used to assess the relative risk of MTCT, low birth weight, and preterm birth associated with malaria.
Approximately 17.4% of infants were HIV positive at or around birth, and the prevalence of serologic and placental malaria were 31% and 32%, respectively. HIV-positive mothers with serological ICT malaria were significantly more likely to have low-birthweight infants, and low-birth-weight infants had significantly higher risk of MTCT compared with infants of normal birth weight.
Although placental and serologic ICT malaria were significantly associated with MTCT, after adjusting for maternal HIV viral load, the risk of MTCT was significantly increased only for mothers coinfected with placental malaria (relative ris = 7.9, P = 0.025).
Placental malaria increases the risk of MTCT after adjustment for viral load. Programs should focus on enhanced malaria prevention during pregnancy to decrease the risk of adverse birth outcomes and MTCT. *Brahmbhatt H et al. Acqu Immune Defic Syn, 2008 Apr 1; 47(4): 472-6.*

Information needs of health care workers in developing countries: a literature review with a focus on Africa

Health care workers in developing countries continue to lack access to basic, practical information to enable them to deliver safe, effective care. This paper provides the first phase of a broader literature review of the information and learning needs of health care providers in developing countries.
A Medline search revealed 1762 papers, of which 149 were identified as potentially relevant to the review. Thirty-five of these were found to be highly relevant. Eight of the 35 studies looked at information needs as perceived by health workers, patients and family/community members; 14 studies assessed the knowledge of health workers; and 8 looked at health care practice. The studies suggest a gross lack of knowledge about the basics on how to diagnose and manage common diseases, going right across the health workforce and often associated with suboptimal, ineffective and dangerous health care practices.
If this level of knowledge and practice is representative, as it appears to be, **it indicates that modern medicine, even at a basic level, has largely failed the majority of the world's**

population. The information and learning needs of family caregivers and primary and district health workers have been ignored for too long. Improving the availability and use of relevant, reliable health care information has enormous potential to radically improve health care worldwide.

Neil M Pakenham-Walsh and Frederick Bukachi Information needs of health care workers in developing countries: a literature review with a focus on Africa. Human Resources for Health 2009, 7:30doi:10.1186/1478-4491-7-30. FULL TEXT at: http://www.human-resources-health.com/content/pdf/1478-4491-7-30.pdf

For your resource centre

Resources related to HIV and AIDS

- **Adult HIV, Perinatal HIV** and **Childhood HIV** are three of the books published by **Electric Book Works Healthcare**, South Africa. EBW books can be downloaded for free or purchased online. They aim to give simple, high-quality, self-teaching materials for nurses, doctors and students. Clear learning objectives help you understand the most important lessons to be learned. Theoretical knowledge is presented in an easy, problem-solving way. Clear, step-by-step guides through definitions, causes, diagnosis, prevention, dangers and management. Case studies in story-form let you apply your new knowledge to solve common problems. Multiple choice questions help you monitor your progress.
  Other titles include **Child Health Care, Mother and Baby Friendly Care, Primary Newborn Care and Saving Mothers and Babies**. EBW e-books can be downloaded and hard copies purchased at http://www.ebwhealthcare.com

- **Alleviating the Burden of Responsibility: Report on a Study of Men as Providers of Community-Based HIV/AIDS Care and Support in Lesotho.** This study demonstrates a range of perspectives about gender and HIV/AIDS care from those participating in and potentially affected by health care initiatives, and makes recommendations for increasing the number of male community-based providers of HIV/AIDS care. View the complete version at http://www.capacityproject.org/images/stories/files/study_of_men_as_providers_of_care_lesotho.pdf

- **Nursing Care of Patients with HIV/AIDS,** published by **Family Health International,** is a package of training materials for nurses who care for patients with HIV/AIDS. The course provides nurses in resource-limited areas with evidence-based knowledge they can use to deliver safe, effective nursing care to their patients. The materials include a facilitator's guide with PowerPoint slides and a participant's guide. They are available online at http://www.fhi.org/training/en/HIVAIDS/NCPGuide/index.htm (or google the title) or email aidspubs@fhi.org to order print copies. See the FHI website at aidspubs@fhi.org for other publications.
  Thanks to Ritva Niemi in Tanzania for recommending these materials.

- **Nutrition and HIV/AIDS: A Training Manual for Nurses and Midwives**
  http://www.pronutrition.org/pubview.php/111
  This manual aims to provide nursing students with the knowledge and skills needed for nutrition care and support of PLHIV. It is organized into three parts. Part I includes introductory sessions with basic information about HIV and nutrition. Part II aims to build technical knowledge of nurses. Part III provides guidance on nutrition care for clients at different stages of the life cycle. While designed for pre-service training, the manual can also be used for in-service training.
  Developed by the East, Central and Southern African Health Community (ECSA-HC), FANTA and LINKAGES Projects with funding from USAID/East Africa

- **Nutrition Care for People Living with HIV and AIDS: Training Manual for Community and Home-Based Care Providers; Facilitators Guide and Participant Handouts**
  http://www.pronutrition.org/pubview.php/113
  http://www.pronutrition.org/pubview.php/112
  These publications are designed to equip community and home-based care providers with sufficient knowledge and skills to provide nutrition care to PLHIV as part of ongoing services. The materials are designed for training providers who do not have extensive education or technical knowledge. Topics include the relationship between nutrition and HIV, assessment of nutritional status, methods for improving food intake, management of HIV and AIDS complications, managing food and drug interactions, care for HIV-positive women and children, food and water safety and hygiene, and principles of counselling and networking.
  Developed by RCQHC and the FANTA Project with funding from USAID/East Africa.

- **HIV Prevention among Vulnerable Populations: The Pathfinder International Approach** provides background on the risks faced by populations especially vulnerable to

HIV/AIDS. It outlines strategies effective in prevention of HIV/AIDS among sex workers, men who have sex with other men, and injecting drug users. Programs described include peer education, provision of comprehensive health services and quality treatment, provider referral networks, and in-service training and sensitization. Find the document under http://www.pathfind.org/Pubs_AIDS. To request hard copies email tech-comm@pathfind.org.
Israel E, Laudari C & Simonetti C 2008 Pathfinder International, Technical Guidance Series Number 6

- **Nutrition, Food Security and HIV: Compendium of Promising Practices** http://www.pronutrition.org/pubview.php/114
  Increasingly, countries in eastern, central and southern Africa are integrating nutrition and food security interventions into HIV services. The Regional Centre for Quality of Health Care (RCQHC) in Uganda and the FANTA Project organized extensive in-country reviews by local teams of nutrition, food security and HIV programs in Kenya, Malawi, Tanzania, Uganda, and Zambia. This publication analyzes and describes the promising practices identified through these reviews. *RCQHC 2008 Published by AED, Washington, DC*

- **Nutrition Counselling for Pregnant mothers in Tanzania.** The module is intended to contribute to improved quality of nutritional counselling for both HIV+ and HIV-women using antenatal care services. It is designed to be integrated into or be delivered as part of focused antenatal care training, and can be used in pre-service, in service, and refresher training, in classroom sessions and for clinical practice. See http://www.pronutrition.org/pubview.php/111
  By Eleonore Fosso Seumo, ACCESS Program and Fatma Abdallah, TFNC Tanzania. USAID and ACCESS /JHPIEGO 2008

Resources related to diabetes

- **International Journal of Diabetes in Developing Countries** at www.ijddc.com is an Open Access journal produced by **Research Society for the Study of Diabetes in India.**

- **National Diabetes Information Clearing-house** at http://diabetes.niddk.nih.gov gives materials on diabetes facts, treatments, statistics, and reports for health professionals, people with diabetes, and the general public. Publications may be downloaded or ordered online, free of charge.
  The site is supported by the US National Institutes of Health.

- **Diabetes prevention and care pamphlets** Patient-focused pamphlets on diabetes prevention and care, including basic food guides and care of the feet, are available in PDF format atwww.dptresources.org.nz/res1.html. *Diabetes Projects Trust-New Zealand.*

Other resources

- **The Uganda Continuing Medical Education Newsletter November-December 2008 Issue 54** includes the following articles:
  - The challenges facing young people
  - Acute Retroviral Illness
  - Dengue Fever – from Capricorn to Cancer
  - Cholera
  - Sterile pyuria
  - Rotavirus – a nasty little cause of diarrhoea
  - Norovirus (Norwalk virus) – another one!
  - Signs of dehydration in children

  To request an e-copy of this and other Uganda CME newsletters, email Dr David Tibbutt at david@tibbutt.co.uk

- **PLoS Medicine** http://www.plosmedicine.org and **PLoS Neglected Tropical Diseases** http://www.plosntds.org are open access journals published by PLoS (the Public Library of Science http://www.plos.org). PloS's mission is to make medical literature freely accessible. All articles are peer-reviewed.

- **UNICEF** has launched a new **Childinfo** website http://www.childinfo.org/index.html, which presents the latest statistical information on children and women - including data from 'The State of the World's Children 2009'.

- **The IYCN Update** is a periodic email newsletter from **USAID's Infant & Young Child Nutrition (IYCN) Project** giving updates on maternal, infant, and young child nutrition for global health professionals. Distributed four times per year, each issue includes research highlights, new resources, and IYCN Project news. The first issue covers nutrition research summaries, a commentary on early HIV testing and infant feeding, and more. View the newsletter: http://tinyurl.com/co7c99.

- **African Medical and Research Foundation (AMREF)** has just published **Clinicians' Guide to Quality Outpatient Diagnosis** by Jane Carter. The manual is for clinicians working in outpatient curative clinics in primary level hospitals and health centres in sub-Saharan Africa. It covers: quality outpatient diagnostic services; clinical examination and use of

laboratory and other investigations; an approach to commonly presenting conditions in outpatient practice; and an approach to disease outbreaks. Other 2009 publications by AMREF are: **Standard Operating Procedures - Essential Laboratory Tests; Standard Operating Procedures - Laboratory Utilization for clinicians; Standard Operating Procedures - Care and Maintenance of Laboratory Equipment; Quality Manual - clinical and Laboratory Diagnostic Services** and **Guidelines on Specimen Collection, Storage and Transportation.** All these can be ordered from AMREF Health Learning Materials Unit (P.O. Box 27691 - 00506, Nairobi, Kenya) or online at www.amref.org.

- **Hypertension Research Editor's Choice** at www.nature.com/hr/focus/editors_choice is a collection of open-access, award-winning articles on hypertension, cardiovascular disease and metabolic syndrome.

- **Otitis Media - Focusing on the Developing World** by Titus S Ibekwe and Onyekwere G Nwaorgu is in **Surgery in Africa Monthly Reviews April 2009** and available at www.ptolemy.ca/members On this website are archives of previous reviews since July 2005, details of the CME process providing MOC credits from the Royal College of Physicians and Surgeons of Canada, a Resource Library and links to an international discussion group.

►HOW TO: Manage Post Partum Haemorrhage (PPH)
A PPH text book in 9 lines!

1. Use oxytocin 10 iu im alone for prophylaxis, with delayed cord clamping (especially in settings with high anaemia rates)
2. If oxytocin is not available, use misoprostol 600mcg orally.
3. If you are going to use controlled cord traction, then wait until the uterus is firmly contracted first. If done earlier (as many of us are guilty of doing) then it probably increases the PPH rate.
4. Umbilical oxytocin has no role in the medical removal of a retained placenta.
5. Start treatment with oxytocin 10 iu iv stat and ergometrine 500mcg iv stat (unless hypertensive). You can add hemabate if you have it.
6. Rub up a contraction, and keep the uterus contracted whilst you inspect for vaginal tears.
7. If the uterus is atonic, you can use misoprostol 400mcg sublingually or 800mcg pr if not used for prophylaxis (do not repeat miso within 2 hrs). However, it probably has little effect (based on studies soon to be published). Details on www.misoprostol.org.
8. If bleeding continues insert an intrauterine Bakri balloon (or a condom tied to the end of a Foley catheter) with 500mls fluid inside.
9. Or if you are doing a CS then use a B-Lynch suture or 'box' sutures into the uterus to compress the cavity.

(Extracted from an email from Andrew Weeks, Senior Lecturer, Division of Perinatal and Reproductive Medicine, Liverpool Women's Hospital, Liverpool, UK (aweeks AT liv.ac.uk) to HIFA2015 email forum 17 March 2009)

***Every effort has been made to ensure that the information and the drug names and doses quoted in this Bulletin are correct. However readers are advised to check the doses before making prescriptions. Unless otherwise stated the doses quoted are for adults.**
To paraphrase Mark Twain, "Be careful of anything you may read on a medical discussion forum - you might die of a misprint."