GUIDE FOR MANAGING HIV INFECTED PATIENTS WITH BODY SWELLING

INTRODUCTION

HIV infected patients might present with bipedal or body swelling secondary to inter-current diseases. Bipedal swelling usually arises from systemic diseases while unilateral or asymmetric swelling often results from local causes. Common causes of body swelling in HIV infected patients include end-organ involvement such as cardiac, liver and renal diseases and others – malnutrition, dependent oedema from advanced disease, Kaposi sarcoma related lymphangitis etc. Oedema can also occur with renutrition after malnutrition (Refeeding oedema).

PRESENTATION

- bipedal swelling
- abdominal swelling
- facial swelling
- symptoms of renal, liver or cardiac diseases
- lympadenitis / lymphangitis
- usually symptomatic or advanced HIV infection
- generic or constitutional symptoms

CLINICALLY EVALUATE FOR:

– Extent of swelling – bipedal oedema, abdominal (ascites), facial and anasarca. Define severity as mild / moderate / severe

– Nature of swelling – pitting, poorly pitting, woody, indurated or tender

– Cardiac decompensation – shortness of breath, exertional dyspnoea, orthopnoea, paroxysmal nocturnal dyspnoea, cough ± frothy white sputum with streaks of blood, tachycardia, rhythm abnormality, elevated JVP, bi-basal chest crackles, gallop rhythm and or displaced apex beat (cardiomegaly)

– Renal disease – alteration in urinary frequency / volume, albuminuria / glycosuria (dipstick), uraemic frost

– Liver disease – (current or past) jaundice, systemic bleeding (incl melaena), history of ethanol, liver consistency / size / enlargement

– Lymphatic obstruction (lymphoedema) unusual cause of oedema that is most often seen with nodal enlargement due to malignancy or infections.

– Nutritional status – wasting, cachexia, anorexia, vomiting, diarrhea, consistent skin changes, stomatitis, cheilitis, dehydration

– HIV/AIDS status – stage of HIV infection, performance status, CD4 cell counts or absolute lymphocytes count, associated indicator diseases (malignancies [Kaposi Sarcoma (KS)], TB etc), anaemia (and its severity), blood pressure, lymphadenopathy (especially inguino-femoral), medications (anti-retroviral agents, co-trimoxazole, anti-TB medications, others)

– Patient's general condition – history of diabetes mellitus, hypertension, liver disease (including HbsAg / anti HCV status), renal or cardiac diseases, sepsis

INVESTIGATIONS

Urgent – Packed Cell Volumes (PCV), Urine dipstick for albuminuria / glycosuria, Blood glucose

Routine – Full Blood Count (FBC), Urea / Electrolytes / Creatinine (UEC), Urinalyses and Urine M/C/S, Liver Function Tests (LFT), serum proteins (albumin), PT-PTT, CXR, ECG

Specific – Abdominal (liver / renal) ultrasound, HbsAg, anti-HCV, stool for occult blood, stool OCP & MCS, blood c/s, lymph node biopsy (histology / microscopy / c/s), fluid (ascites / pleural fluid) chemistry, microscoy, c/s & cytology, ECHO, 24 Hour urinary protein, creatinine clearance.

TREATMENT

Depends on the cause-

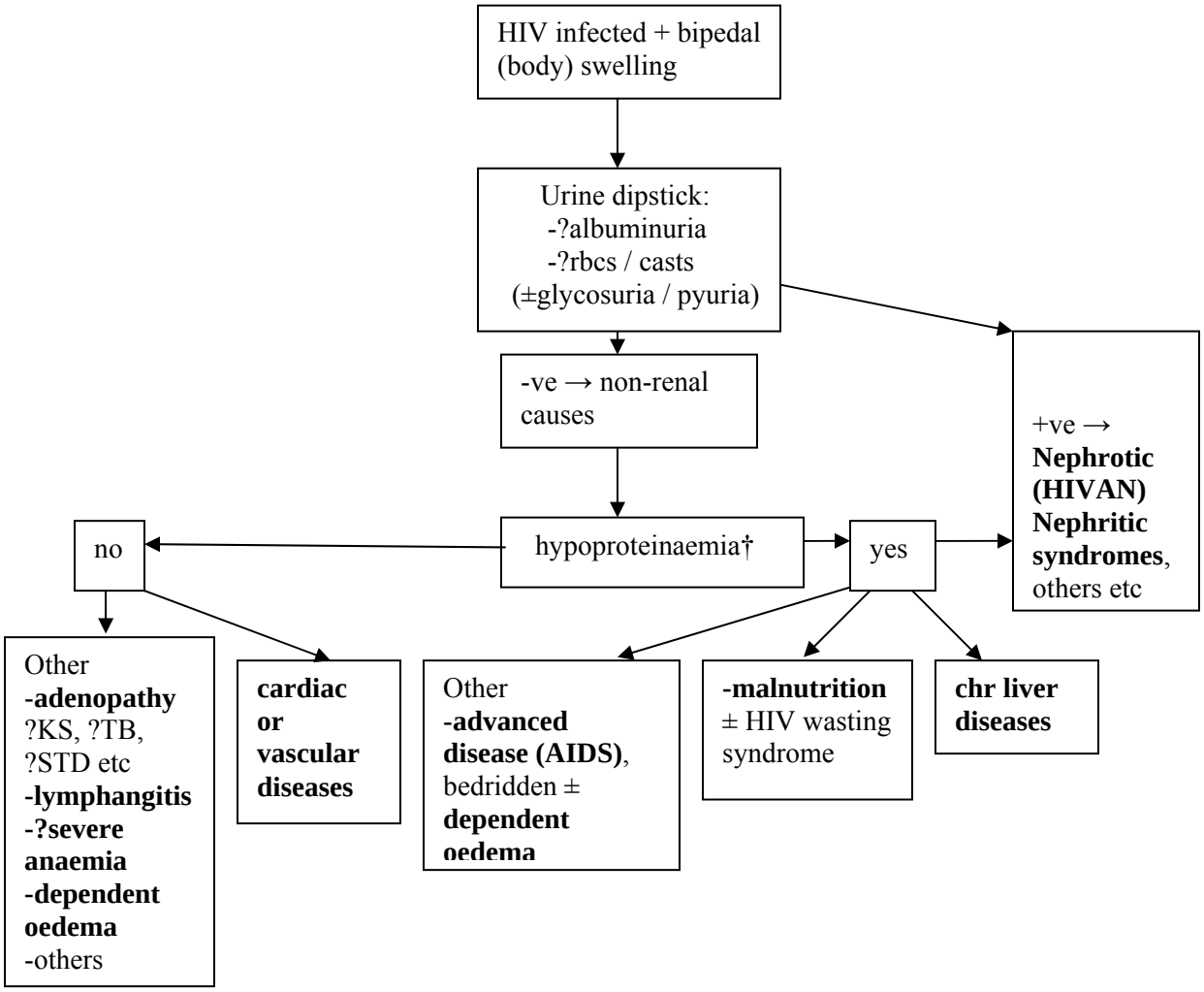
1 – For CCF: start Captopril 6.25mg tid up to 50mg tid; Frusemide 10 – 40mg/d (up to 240mg a day) or Spironolactone 25mg bid (up to 50mg bid); consider Digoxin 0.25mg/d especially with arrhythmia or refractory disease. Treat hypertension and endocarditis. Continue with HAART but consider discontinuing zidovudine and ethanol if no cause is identified.

2 – For HIVAN: start or continue with HAART; Captopril 6.25 – 25mg tid; with marked oedema Frusemide 10 – 40mg/d (up to 240mg a day); with azoatemia dialysis – few centres dialyse HIV patients in the country (one each in Abuja & Kaduna). Cautious use or replacement of nephrotoxic drugs – co-trimoxazole, indinavir, tenofovir etc. Manage associated conditions accordingly – diabetic nephropathy etc.

3 – For Chronic liver disease: Spironolactone 25 – 50mg bid ± Frusemide 10 – 40mg/d; high caloric diet; restrict proteins if encephalopathy imminent otherwise may consider iv human albumin with refractory oedema / ascites; Cautious use of hepatotoxic agents – rifampicin, isoniazid, pyrazinamide and or replacement of nevirapine etc. Discontinue ethanol. Refer for management of hepatitis virus infection.

4 – Maintenance care: Continue with ART, improve feeding and nutrition, especially protein intake if no contraindication. Consider iv human albumin if severe oedema with hypoprotenaemia. Add nutritional supplements – vitamins, amino acid preparations etc. Actively monitor and ensure normal potassium level especially while on diuretics. Bed ridden patients should be mobilized as soon as possible.

ALGORITHM FOR EVALUATING BODY SWELLLING IN HIV-INFECTED PATIENTS*



* clinical conditions are not mutually exclusive and may overlap
† protein levels in Nigerians is lower than reported figures in Caucasians

Table 1. HIV related cardiac diseases associated with body (bipedal) swelling

Disease	Cause	Presentation	Management
Dilated Cardiomyopathy **vs** **Hypertensive Heart Failure** **vs** **Other (RHD)**	-Unclear -myocarditis, -ZDV induced cardiomyopathy etc	Oedema, SOB, cardiomegaly, ↑ JVP, CCF	Frusemide 40mg po OD + ACE Inh + spironolact (±Digoxin); ART Treat HTN
Pericardial involvement	?contiguous TB, pneumonia, neoplasia (KS, Lymphoma), viral	Oedema, SOB, ↑ JVP, hepatomegaly	-Depends on cause -kiv Abx or anti-TB -centesis if tamponade
Endocarditis*	a-marantic endoc. from advanced HIV/AIDS, ?malignancy b-S aureus in IVDU with Rt sided endocard.	a- fever, cachexia, features of SBE b- Rt sided (IVDU)	 Iv Abx
HIV – related pulmonary hypertension (HRPH)	Unclear	- Rt sided symptoms (SOB, oedema, ↑JVP, hepatomegaly)	-ART
Neoplasms – Cardiac involvement by KS, Lymphoma† etc		[as above]	-management of neoplasia; [Doxorubicin Rx for KS → cardiotoxicity] -ART

* swelling is unusual unless there is associated heart failure

† lymphadenopathy / lymphangitis (especially inguino-femoral) caused by KS, lymphoma, TB, STD etc may cause poorly pitting oedema without cardiac involvement

Table 2. HIV related renal diseases associated with body (bipedal) swelling

Disease	Cause	Presentation	Findings	Management
Nephrotic Syndrome*	HIV-Assoc Nephropathy (HIVAN); Others	Body incl facial swelling†, anasarca ± urinary freq abnormalties	Proteinuria, Hypoproteinaemia ± urinary rbcs, casts; USS – normal sized kidneys	Rx underlying causes; ART; ACE Inh; Dialysis; ?steroids in HIVAN
Nephritic syndrome*	Several incl HBV, HCV, immune compl. disease etc	Oedema, oliguria, 'coca-cola urine'	Urinary rbcs, casts, sub-nephrotic proteinuria	Rx underlying causes; ART; ACE Inh; Dialysis;
Others*	Variable	Oedema, oligu- or poly-uria	Variable	Depends on cause

* with renal impairment uraemic features may predominate or co-exist with swelling; UEC should always be measured.

† Facial swelling is probably more prominent with renal compared to malnutrition, liver or cardiac diseases.

Table 3. Uncomplicated organ diseases in HIV infection that may not be associated with body (bipedal) swelling

Organ	Disease	Causes
Liver	- acute viral hepatitis	- HBV, HCV & ?HAV
	- hepatotoxicities	- most ARVs- notably NVP; Rif/INH/PZA
	- biliary diseases	- Cryptosporidiosis, sepsis, ddI related pancreatitis, ?ascariasis
	- malignancies	- Hepatoma
Cardiac	- Endocarditis	- especially non-Rt sided (IVDU; 2nd S. aureus
	- Ischaemic heart diseases	- ? Protease inhibitors (↑ lipidaemia)
	- Early (subtle) myo-pericardial diseases	- Toxoplasmosis, viruses – CMV etc
Renal	non-nephrotic / nephritic conditions	
	- pre-renal / ATN	- diarrhoea, sepsis
	- nephrotoxicity	- co-trimoxazole, foscarnet, others
	- pyelonephritis	- infections
	- fanconi syndrome	- tenofovir, adefovir
	- nephrolithiasis	- indinavir
	- [chronic / end-stage renal failure]	- [all renal conditions]