A STUDY TO COMPARE ANTEMORTEM DIAGNOSIS WITH AUTOPSY DIAGNOSIS AT THE UNIVERSITY TEACHING HOSPITAL, LUSAKA, ZAMBIA

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A STUDY TO COMPARE ANTEMORTEM DIAGNOSIS WITH AUTOPSY DIAGNOSIS AT THE UNIVERSITY TEACHING HOSPITAL IN LUSAKA

By

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A study submitted in partial fulfillment of the requirements for the Master of Medicine (Med) in internal medicine

School of Medicine

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DECLARATION

I hereby declare that the work presented in this study for the degree of master of Medicine (M.Med) internal medicine has not been presented either wholly or in part for any degree and is not being currently submitted for any other degree

STATEMENT

I hereby certify that this study is entirely the result of my individual effort. The various personnel to whom I am indebted have been acknowledged in the paper.

DEDICATION

To my mother Zenith

APPROVAL

This Dissertation of **JOHN BARRY OMARA** is approved as fulfilling part of the requirements for the award of the Masters of Medicine by the University of Zambia.

Signature:	Date:
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ABSTRACT

This study was done between April 1, 1993 to December 31, 1993. It was done to compare antemortem and post mortem diagnosis. Full autopsy was performed on 30 subjects out of 888 patients who died under the care of Unit I in the department of Medicine during the period of the study. The study results were influenced by 2 disease epidemics:- The HIV epidemic and an outbreak of meningococcal meningitis which followed a very severe drought described as the worst to have affected the Southern African region in 40 years. Basic laboratory workup was done in 12% of the cases. By comparing antemortem, autopsy and the combined diagnosis it was possible to evaluate the contribution autopsy would have on improving the quality of clinical diagnosis for a physician working at the University teaching hospital. At the time of this study UTH lacked histopathology and sophisticated laboratory work up and clinical postmortem was not being regularly conducted at the hospital except for police cases.

Although many minor discrepancies were noted, on comparing autopsy and antemortem diagnosis, a major discrepancy was considered as omission of the disease directly contributing to the cause of death. The study showed that 63.3% of diagnoses

were in agreement. Sample size was not calculated before the study because there were no regular postmortems and no records of postmortems being done in 4 years preceding the study.

Major discrepancies were found as follows:

25% in the central nervous system;

67% in the respiratory system;

40% in the cardiovascular system;

0% in the genito-urinary system;

33% Gastrointestinal and liver disease

50% miscellaneous diagnosis

This study concludes that its findings of 63.3% overall agreement between antemortem and autopsy diagnosis are similar to literature results from elsewhere but the hospital should conduct regular autopsy in order to contribute to overall medical knowledge in the field of medicine.

The number of teaching staff at the hospital is small due to the weak national economy such that between admission and being seen by a senior registrar or consultant there may be a time lag of between 4 hours and 72 hours. So the number of senior doctors also needs to be improved.

The study sample was small (30 subjects) the results of this

study should therefore be treated cautiously.

INTRODUCTION

The University Teaching Hospital (UTH) is situated in Lusaka the National capital of Zambia. It is the biggest, multi disciplinary and the national referral hospital. The immediate catchment area is Lusaka with a population of 1.2 million (1989 national census) and the surrounding central province. All cases beyond the investigation or management scope of all other hospitals in the country are hierarchically referred from rural health centres to district and mission hospitals, to central hospitals till they finally reach Lusaka's UTH.

The national catchment area is, therefore, Zambia's population of 8.2 million (projected population from 1989 census). The institution (UTH) is built over an area of 1KM square. UTH is managed by a Board of Management (the UTH Board) through an Executive Director, a deputy director, departmental managers and heads who formulate and implement hospital policies through various appropriate committees.

UTH offers the clinical field of practice for the partial fulfillment for the training programme for the undergraduate doctors and postgraduate doctors (under the University of Zambia (UNZA) Medical School). It is also responsible for training of Registered Nurses; Para-medical staff; Clinical Officers and Post-Basic Nurses courses.

The UNZA School of Medicine opened in 1968 is the only training school for doctors for Zambia and has a graduate output of 40-50 per year;runs 4 years post graduate programme leading to the Masters of Medicine, (M.Med) qualification in Surgery; Paediatrics; Internal Medicine; Obs & Gynae. The school also runs the post-basic nursing programmes leading to B.Sc. degree in Nursing education.

UTH is equipped with the necessary consultants;specialist clinics and in-patient wards, attends to all disciplines of patients classed under the department of Surgery; Paediatrics; Internal medicine; Obstetrics and Gynecology and various sub-specialities. From UTH, Psychiatric patients are referred to a psychiatric hospital (Chainama Hills Hospital) 10 KM away from UTH, Tuberculosis TB patients are referred to Kafue Gorge situated 120 KM south of Lusaka and Kabwe 140 KM north of Lusaka for male and female patients respectively.

UTH has a beds/cots/incubator complement of 1,800 (Hospital statistics 1992). The total attendance of outpatients was 372,208 (in 1992) with a total admission of 113,190, total deaths were 11,767 in the same year (UTH hospital statistics).

The study presented in this book was done at the height of the

HIV epidemic in Zambia. HIV therefore had a lot of influence on the trend of disease and revelation of this study.

THE IMPACT OF HIV ON DISEASE STATISTICS WORLDWIDE AND ZAMBIA

HIV was discovered in American Homosexuals and drug abusers in 1981. (Nicholus 1989). In Zambia the first case of HIV was seen in 1985 (Hira 1989). This discovery was followed by extensive studies in the wards, skin and STD clinic and the Tropical Disease research centre at Ndola - Zambia. Since the description of the first cases of HIV/AIDS in Zambia in 1985 there has been an upward trend of diseases whose response to treatment requires an intact body immune system (Hira et al 1989, Nkandu Luo et al 1989).

This is reflected both in the general and the specific UTH disease statistics in which admissions were 93,454 in 1986 and 111,190 in 1992 (Hospital Statistics 1986-1992) and even allowing for population increase in Lusaka this is still higher than would be by projection. Mortality rate was 5% and rose to 11% in 1992 a two fold increase. Even allowing for epidemics like cholera and Dysentery outbreaks, the trend observed year by year has shown a steady increase since 1986 to 1992 (Hospital Statistics UTH 1989-92) see tables. There was also increase in bed occupancy rate from 1986 to 1992

(Hospital Statistics 1989-92).

In this upturn of events, the department of medicine and paediatrics bore more burden than Surgery, Obs & Gynae, again because the opportunistic infections associated with HIV/AIDS are more often treated under internal medicine/ sub-specialities and paediatrics than the other two departments (Hospital Statistics 1989-92).

Worldwide literature shows an upturn in the statistics of prevalence of opportunistic infections in patients suffering from HIV/AIDS (Nicholus, 1989).

In U.S.A AIDS was initially discovered on observing that diseases which were initially only observed in Cancer patients taking cytoxic and immunity suppressing drugs were occurring, seemingly spontaneously in homosexual and drug abuser communities (Nicholus 1989).

In Zambia a similar trend has been observed in Heterosexual, especially high risk behaviour groups since 1985 [Hira et al 1989], (Luo et al 1990], other feature characteristic of HIV/AIDS have also been described [Wadhawan, Watters 1989]. Most of the studies done in Zambia are epidemiological and Clinical (antemortem). For any hospital to check on the quality of its performance, regular autopsy is needed {Nicholus 1989}. This

service has not been regular at UTH. UTH autopsy records show only police postmortems being done regularly since 1986. There are very few clinical autopsies done since 1986 to-date.

For a University Training Hospital, with the amount of responsibilities outlined before, in the middle of a new multi system disease epidemic, the results of this study will highlight the need for regular autopsy to support and improve the confidence in clinical diagnosis at UTH and Zambia as a whole. Lack of laboratory (Histopathology) workup should not be an excuse to deprive clinicians of this audit process.

As a follow up to this study, larger studies done over longer duration of time with more specific disease or pathology targets will help in elucidating the effect of HIV/AIDS in various internal organs or diagnoses.

LITERATURE REVIEW

The job of the pathologist is not to confirm the current errors of clinical medicine but rather to establish the truth [Gresham G.A Turner A.F 1979]. Many discrepancies between autopsy and clinical diagnosis have been reported [Nicholus 1989]. "A 22 year old Haitian woman, hospitalised after 9 months of fever, watery diarrhoea, excessive weight loss, progressively became weaker, diagnostic tests showed 4 intestinal parasites and a tubercular brain lesion, response to anti-tubercular treatment was slight

and three months later she died. Autopsy showed viral pneumonia and toxoplasma gondii brain infection apart from the tubercular brain lesion. The patient had AIDS" [Nicholus, 1989].

In hospitals where regular autopsy is done as many as 25% of clinical diagnosis may be totally or partially wrong (Greesham & Turner 1979). In some studies the differences range from 35 to 70% (Greesham & Turner 1979). Regular autopsies often reveal further unsuspected disorders, enabling a better and fuller understanding of the relationship between clinical observation and disease processes which may in time, lead to better clinical diagnosis and more appropriate treatment [Nicholus, 1989].

Since the upswing in morbidity and mortality is due to HIV/AIDS "early diagnosis can prolong the life of a person infected with the HIV virus.

Antemortem and autopsy correlation allows the physician to be on the lookout for life threatening opportunistic infections that may be the first clinical signs of immune suppression [Nicholus, 1989].

According to the American experience, "In 1981 only 18% of HIV infected patients diagnosed as pneumocystis carinii pneumonia in New york City survived longer than 1 year, by 1985 survival had increases to 48%" due to better understanding of the disease, early diagnosis and improved treatment [Nicholus, 1989].

Autopsy has an important role as a complement in the full investigation of disease (Greesham & Turner 1979) and Various studies have emphasised the need for continuous autopsy in hospitals to support the quality of clinical diagnosis (Greesham & Turner 1979). This is true even in developed countries which can afford to have a lot of laboratory, radiological and other antemortem investigation facilities [Nicholus, 1989].

In another investigation in the USA, "He was a 40 year old homosexual with a history of more than 900 anonymous sexual encounters. He had been well until july 1982, when he began to tire easily and was sometimes too weak to leave the house. Later he developed persistent swollen glands and daily fevers. When he entered the hospital he had pneumonia, two kinds of Cancer and a Viral infection that was destroying the retina in both eyes. The Cancers and Pneumonia initially responded to treatment but symptoms recurred when therapy was stopped. Meanwhile he developed signs of brain disease; his memory failed; he appeared drowsy, and his handwriting changed. Four months later he died. [Nicholus, 1989]

Both the man and the Haitian woman cited earlier had AIDS and had the typical clinical features of the early cases of AIDS [Nicholus, 1989] most patients had multiple problems and failed to respond to standard treatment, when they did respond, symptoms often returned as soon as the treatment course ended. Although

AIDS remains incurable, in America, more than 15% of patients now survive at least 5 years after diagnosis [Nicholus, 1989]. Autopsy has had a strong contribution in the investigations and management of this new disease [Nicholus, 1989].

Although a few clinical studies on HIV/AIDS patients have been done in Zambia [Wadhawan, Watters, Bem 1990], there are no studies on the survival trends of HIV/AIDS patients in Zambia, neither are there studies to correlate antemortem to postmortem diagnosis in such patients in Zambia and UTH in particular.

Although the pathogenesis of HIV/AIDS infection is similar in most patients with HIV disease the epidemiology and clinical presentation vary, depending on a number of unidentified risk factors. In a study conducted at the AIDS clinic attached to the dermato-venerology department at UTH [Hira et al 1989] among 1,652 patients, 1,107 (67%) were seropositive for HIV antibody, although this study is biased in that it is a selected groups of patients of the sexually active population, it is a signal of high prevalence of HIV/AIDS disease in Zambia. It is the same HIV/AIDs patients who form up to 80% of TB cases today seen in hospitals and HIV associated in 58-60% of deaths in the medical

wards at UTH (Hira et al 89).

Tuberculosis, one of the specific opportunistic infections commonly associated with HIV/AIDS has received extensive attention and clinical, epidemiological and biochemical studies are going on to define the various aspects of the disease [Elliot, Faussete, Mwiinga UTH, 1990]. The disease is a multi system infection. Extensive clinical studies have been done on Kaposis Sarcoma which is one of the common HIV related cancers in Zambia [Bailey A. 89, Hira, Parme UTH 1989).

Subsequent studies with the correlation of macroscopic, microbiological, Histopathological, virology, biochemical and immunological backing will go a long way in elucidating HIV/AIDS in Zambia.

METHODS

Definitions

A Major discrepancy between antemortem and autopsy diagnosis is where the main condition leading to death was found at autopsy but was not foreseen ante-mortem.

A minor discrepancy is where a condition was found at autopsy, but not foreseen ante-mortem but was not the cause of death.

SELECTION OF SUBJECTS

The population base for this study were all patients who died in hospital under the care of unit 1 of the department of Medicine between the periods 1/4/92 to 31/12/92.

SELECTION OF STUDY SUBJECTS

Postmortems were done on all subjects:-

a. for whom the responsible relatives gave a written consent for the postmortem to be carried out.

b. Burials were to take place within Lusaka.

c. Burials were to take place during weekdays.

d. When clinical duties were not so binding as to allow the principle investigator time to carry out the post-mortem.

THE POST MORTEM ENVIRONMENT AT THE UTH

The UTH postmortem room where all the procedures of post mortem were done is a clean area and had good lighting throughout the period of this study.

DURING AUTOPSY

The principal investigator (P.I) and the mortuary technicians carried out normal precautions to prevent transmission of infection. Any samples taken for example for microbiological investigations were collected under sterile conditions in accordance with the guidelines from Gresham & Turner 1979.

DATA COLLECTION

The time lag between death and post-mortem procedures ranged between two and four days. During the waiting time, the bodies were kept in the refrigerators in the mortuary to avoid decomposition.

All autopsies were done by the principal investigator with the participation of the mortuary technicians, who were largely concerned with subject identity and documentation. Identification and verification of subject identity was done by relatives, preparing the body for autopsy; opening the body was done in the presence of the (P.I.), exposing and removing the internal organs was done as instructed by the P.I.

All findings during the post-mortem procedure were entered in the deceased patients's file; data relevant to the study was then extracted from the file and entered on the study forms by the P.I

PROCEDURE BEFORE AUTOPSY

1. All deaths under unit 1 of the department of Medicine were considered for the study.

2. A written consent was obtained from the relatives for the study.
3. Clinical records were retrieved,
4. The body was identified and confirmed by the relatives.

POST MORTEM (P.M) EXAMINATION

All the post-mortem in this study were done as full post mortem because none of the consents were of limited nature.
The techniques followed in all cases was as described by little with modifications suggested by Grecham & Turner 1979.

CLINICAL DATA COLLECTION

Clinical data extracted from the case records followed the standard routine of the hospital. At UTH admitted patients are generally first seen and documented by junior medical staff who also arranged treatment and investigations. Patients are subsequently reviewed by more senior doctors whose findings and conclusions are documented. The period between the initial assessment and subsequent senior review varied from four hours to two or three days depending on clinical indications and the period between admission and regular senior ward rounds.

Consequently clinical data was recorded by a number of different doctors with varying levels of experience. Patients dying soon after admissions may not have been reviewed by senior doctors.

ANTE/PRE-MORTEM INVESTIGATIONS

Investigation undertaken before death were based on clinical indications and only those tests required for diagnosis and care of the patients were undertaken. Not all investigations planned could be completed in patients dying soon after admission. Every Ante-mortem test reported in results will be listed;

POST-MORTEM INVESTIGATION

Samples collected at autopsy were individualised according to the ante-mortem diagnosis and gross findings at autopsy. Such investigations were limited to material for microbiological examination. The tests carried out and methods used were as given below.

ESTABLISHING THE DIAGNOSIS

ANTE-MORTEM DIAGNOSIS

This was based on the documented conclusions reached by the doctors caring for the patient at the time of death who utilised clinical, laboratory and radiological data available to them.

POST -MORTEM DIAGNOSIS

The post-mortem diagnosis was based on the gross findings at autopsy and results of tests on samples taken at autopsy and were described as conditions present at the time of death without always stating the exact cause of death.

RESULTS

A total of 888 deaths occurred under the care of unit 1 during

he period of the study (departmental statistics - medicine) see able 2. 50% of deaths had either direct or indirect elationship to HIV (departmental statistics) Table 7. Of the bove deaths 30 met the criteria for autopsy and also for ecruitment into the study.

0 (66.6%) were males, while 10 (33.3%) were females (Table 2). heir age ranged from 15 years to 60 (Table 2).

he dominant diagnosis of conditions leading to cause of death as concluded by considering antemortem, clinical and lab data ith post mortem and data interpreted mainly at macroscopic level nd findings were as follows:-

Table No. 1: Distribution of cause of death by diagnosis

Acute meningitis	8
Friderichsen water-house syndrome	(3)
Chronic meningitis/brain abscess	2
Tuberculosis	8
Cerebral malaria	3
Subdural haematoma	1
Renal failure	1
Septicaemia	2
Congestive cardiac failure	1
Acute pancreatitis	1
Diagnosis undetermined	3

TOTAL 30 Subjects

BLE 2

- PATIENT MORBIDITY & MORTALITY STATISTICS - DEPT. OF MEDICINE

T APRIL TO DECEMBER 1992 (UTH) MEDICAL RECORDS/STATISTICS DEPT

MONTH	ADMISSION	DISCHARGE	DEATHS	MORTALITY / 1000 ADM	%AGE MORT
APRIL	2446	2094	352	143	14.3%
MAY	2241	1902	339	153	15.3%
JUNE	3304	2941	363	110	11.0%
JULY	3626	3253	373	103	10.3%
AUG	2169	1794	375	172	17.2%
SEPT	2648	2270	378	74	7.4%
OCT	3139	2700	439	140	14.0%
NOV	2698	2284	414	153	15.3%
DEC	2,223	1,965	258	110	11.0%
TOTAL	27140	21203	3291	121	12.1%

TABLE OF VARIABLES AGE/SEX OF STUDY SUBJECTS

AGE	15-25 YRS	26-35 YRS	36-45 YRS	> 46 YRS
MALE	3	8	5	5
FEMALE	2	2	2	3
TOTAL	5	10	7	8

BLE 3: RESULTS, DIAGNOSIS, DISCREPANCIES AND PERCENTAGE

YSTEM	CONGRUOUS NO	%	NON-CONGRUOUS NO	%	TOTAL NO	%
NS	NO 9	% 75	NO 3	% 25	NO 12	% 40
VS	3	60	2	40	5	18.7
ESP	2	33	4	67	6	20
ENITAL URINARY	2	100	0	0	2	6.7
IT	2	67	1	33	3	10
ISC	1	50	1	50	2	6.7
OTAL	19	63.3%	11	36.7%	30	100%

TABLE 4 SUMMARY OF RESULTS

	TOTAL	NO	%
AM-PM DIAGNOSIS CONGRUOUS	30	19	63.3%
AM-PM DIAGNOSIS NON-CONGRUOUS	30	11	36.7%

f the 30 subjects studied, 12 (40%) had affection of the central ervous system (CNS), of these, in 9 (75%) cases, there was no iscrepancy between antemortem (AM) and post mortem (PM) iagnosis.

hile 3 (12%) of the cases had discrepancies between AM and PM iagnosis. 6 (20%) of the cases had Lung and Pleural disease of hese 2 (33%) had no discrepancy between AM/PM diagnosis, 4 (67%) d discrepancies.

(18.7%) of the cases had cardiovascular (Heart, Pericardial and scular) disease. In 3 (60%) cases there were no discrepancies tween AM/PM diagnosis, in 2 (40%) there were discrepancies. (6.7%) of the cases had kidney and Genito Urinary disease, 2 00%) had no discrepancies, 0 (0%) had discrepancies.

(10%) had gastrointestinal and liver disease; in 2 cases
6.7%) AM and PM diagnosis were in agreement, 1 (33.3%) had
screpancies.

(6.7%) of the cases has miscellaneous disease of which 1 (50%)
d no discrepancies between AM/PM diagnosis. 1 (50%) had minor
screpancies.

all cases studied, 19 (63.3%), of the cases had no
screpancies between AM/PM diagnosis, 11 (36.7%) had
screpancies.

SCUSSION

otal of 30 subjects were entered into this study from a study
ulation of 888 patients who died under the care of UNIT 1 in
department of Medicine. The rather small number studied was
to the fact that:_

Many families did not consent for post mortem on religious grounds (80 cases),

Others did not consent on emotional grounds. Emotions were high in cases of families where many family members had died of HIV infection which some family misconstrued was due to witchcraft this was in turn believed to be due to jealousy from neighbours who felt bad about the success of the family life (600 cases),

Others did not consent on ground of distance between UTH and the village where burial would take place (120 cases), Day of week to bury - those wanted to bury during the weekend could not have post mortem done during the week because the mortuary would not keep the bodies after post mortem (58 cases).

s sample size is inadequate and conclusions drawn from it may be universally applicable.

BLE 5 CAUSES OF NON-CONGRUITY

ses No 5, 12, 14, 15, 20, 23, 24, 25, 28

ANTEMORTEM DIAGNOSIS	POSTMORTEM DIAGNOSIS
CASE No. 5 Coma	Miliary TB
CASE No. 12 Septicaemia	Acute Haemorrhagic Pancreatitis
CASE No. 14 Lobar pneumonia	Constrictive Pericarditis
CASE No. 15 Meningitis	-Pneumonia -Caseating TB medistimal glands
CASE No. 20 Hypoglycaemia	Pulmonary Embolism
CASE No. 23 Meningitis	Broncho pneumonia
Case No. 24 Septicaemia Paralylicus ileus	Fulminant Colitis
Case No 25 Meningitis	Vomitus in the bronchus
Case No. 28 Chronic febrile illness (Puo)	TB mediastinal glands brain abscess

NERVOUS SYSTEM

here was 75% congruity between Antemortem and postmortem iagnosis in the nervous system. There was a high number of cute meningitis 7 of 30 cases (23.3%) and was the result of an utbreak of meningococcal meningitis which followed the worst rought in 40 years in Zambia and Southern Africa that occurred ring the time of the study, otherwise meningitis eningococcal) normally constituted less than 5% (1990 UTH atistics 1989-1992) in adults who died at UTH. Of these cases meningitis, 3 developed acute adrenal haemorrhage and were mitted with unrecordable blood pressure; high temperature; eble pulse; peripheral cyanosis and peticheal haemorrhages or chymosis of the trunk; pelvis and thighs. All the three were eated in the intensive care unit (I.C.U). Despite a high dose eatment with hydrocortisone IV ranging from a bolus of 200 mg start then 100 mg 4 hourly IV to 400 mg IV 4 hourly, they got ogressively worse till they died. Clinical speculations were tially "circulatory failure" a diagnosis based on admission a which showed low blood pressure which never showed any rise spite resuscitation throughout the period of monitoring from ission till death. Clinically the cause of low BP was pected as Friderichsen-waterhouse syndrome which was later firmed by the post mortem proceedings of this study.

ONIC MENINGITIS AND BRAIN ABSCESS

was encountered in 3 (10%) cases, in these, there was ory of headaches and fever ranging from 2 to 3 months. In the s of cerebral abscess, one patient had a fit on admission e the other had hemiparesis.

ne other two cases of cerebral abscess there were resistance eck movement in all directions, in the two cases of chronic ngitis no fits or paralysis/paresis were mentioned in history ysical findings. The aetiology of cerebral abscess in both above could not be traced to penetrating skull injury or nfection. Both cases had multiple locules of pus so one may ude that the source was possibly haematogenous [Davidson] or Metastatic spread. Cerebral abscess is known to present imes acutely with fever, headache, meningism and drowsiness Merk Manual 13th Ed 1977], but more commonly; over days or with features of cerebral mass lesion with little or no nce of infection [The Merk Manual], Epilepsy or raised cranial (The Merk Manual 1977). In cases of raised cranial pressure in which lumbar puncture would have been a-indicated, C.T. scan would have shown ring lesions in the of foci of pus. White cell counts might have shown raised, count but the patients had been on antibiotics which may changed the picture. Treatment with Penicillin did not d in changing the downward course of patients condition in cases. In suspected haematogeneous cases the organism

spected would be streptococcus, bacteroides or proteus [A. upp et al. 1987].

one of the cases of cerebral abscess, Nocardia was grown from e pus from the cerebral hemispheres, in the second case there s mixed bacterial growth. The case of Nocardia did not respond Penicillin to which it should have been sensitive. During the partmental Mortality meeting of 14th December, 1993. In a UTH perience an Asian HIV negative adult male who was on standard nicillin doses for meningitis treatment for 3 weeks in the spital Intensive Care Unit did not respond and eventually died, t microbiology studies showed neisseria meningitides [Arthur birige-personal communication 1992]. In case of cerebral scess, a capsule around the abscess is thought to explain sistance to antibiotics [A. Krupp et al 1987]. Burr holes are commended repeatedly if necessary in the treatment of such tients [A. Krupp et al 1987]. Chronic meningitis or subdural pyema is said to result from sinusitis or osteomyelitis or ddle ear disease. Epilepsy and hemiparesis are said to be mmon [Thomas Adams et al 1977] treatment is by burr holes and propriate antibiotics.

MPHO RETICULAR SYSTEM AND THE HIV SCENERIO

SEATING LYMPHADENITIS IN THE MEDIASTINUM

x (20%) subjects had caseating mediastinal lymphadenitis, all 00%) had fever ranging from 2 weeks to six months, 3 (50%) had

dache which was severe, varying in character from throbbing dull and giving a sensation of getting confused. Weight loss recorded in 2 (33.3%) of the cases, 4 (66.6%) of the subjects been treated for recurrent fevers diagnosed clinically as aria. One (17%) of them had a positive MP slide. I n all cases ated for malaria the fevers responded to chloroquine only to ur afterwards.

subject (17%) had numbness of feet and hands for 3 weeks. ee (50%) were brought to hospital with complaints of mental fusion. Three (50%) had both neck stiffness and positive ing sign. Five (83.3%) had cough ranging from 3 weeks to six hs with various degrees of chest pain and dyspnoea. tional miscellaneous findings were: diarrhoea; oral thrush; ting; anaemia; papular and pustular generalised skin rashes. case had three to four different findings on post-mortem. additional diagnosis ranged from anaemia; fibrinous carditis, pleural effusion with adhesions; pneumonia; urative lung disease; chronic meningitis; liver cirrhosis to nephritis; Although HIV seroreactivity was not tested in all patients, they satisfied the clinical criteria for the nosis of HIV (W.H.O 1990).

n the study subjects

HO set up criteria for the diagnosis of HIV/AIDS in adults hildren and when this is applied to the data on each subject

udies the following cases were clinically cases of symptomatic
V/AIDS.

ses No: 2, 4, 5, 7, 9, 10, 13, 14, 15, 23, 26, 28, 29, 30 /
, 21, 25 = 17 cases (56.6%)

ese were distributed under various systems as follows:-

BLE NO. 6 Table of HIV in the Study Subjects

	No	%
CNS	7	23.3
CVS	2	6.6
Resp	5	16.6
Renal	1	3.3
GIT	1	3.3
Misc	1	3.3
TOTAL	17	56.6%

om the above table, the overall percentage of influence of HIV
cause of death is similar between the findings of this study
d the statistics of the department of medicine (Dept of
dicine mortality meeting reports 1991,1992, unpublished).

e table shows a 56.6% overall influence of HIV in causation of
ath among the subjects studied, this is similar to the overall
partment of Medicine mortality data for 1990, 91, 92, 1993.

It also shows the respiratory system and nervous system as leading causes of mortality which is similar to the findings in this study.

RESPIRATORY SYSTEM (RS)

RS - contributed 6 cases (20%) to this study, there was (33%) congruity and 67% discrepancy.

In Zambia, due to tuberculosis of which 80% is linked to the HIV epidemic, chest disease has since 1990 become the leading cause of death in Zambian adults 15 years and above (Ministry of health statistics 1989-92). Since 1990 TB took over from malaria as the leading cause of death in adults 15 years and above. Percentage lead of death from tuberculosis increasing each year since 1990. See table below:-

Table 7 Comparing TB vs Malaria as leading causes of death in Zambian adults 15 years and above

Year	1989	1990	1991	1992
TB	14.9%	16.9%	16.5%	16.0%
Malaria	15.8%	15.2%	12.9%	11.7%

art from the HIV epidemic PTB has increased death rate from est disease due to poor nutrition/poor living conditions, ortage of drugs, default to treatment due to ignorance of ngers of the disease (Ketata 1993).

ner cases of TB with mediastinal caseating lymphadenopathy esented with pyrexia and after antibiotic failure of treatment ey were labelled as pyrexia of unknown origin (PUO). The other ason for the large discrepancy is the actual number of cases volved (6) which is a very small number and is therefore not representative sample of discrepancy incidence in the actual spital practice. When chest disease is reported as PTB + eumonia + asthma and other chest conditions, the percentage rtality is >20%.

e low congruity (33%) and high discrepancy (67%) are due to ntion (resulting in delaying the diagnosis) taken by admitting ctors in placing the diagnosis TB on clinical grounds. nfirmation of TB diagnosis based on sputum and radiological idence often takes time to come because of administrative set which causes a long time lag between admission of patients and ray and sputum examination results. Some patients may erefore die before the diagnosis label of PTB is placed on em, even when such a diagnosis could have been suspected on

nical grounds.

other point to emphasise is the fact that due to the large ber of tubercular lung and pleural disease seen in hospitals ce the start of the HIV epidemic, both pleural and lung ease are easily diagnosed by even less specialised doctors and ponse to treatment is good so the deaths are fewer than in tems which are less often affected or are less accessible to nical or invasive investigation procedures and diagnosis.

The Cardiovascular System (CVS)

re were 5 study cases under this system which was 18.7% of overall study cases. 3 (60%) were congruous while 2 (40%) e not congruous diagnosis with postmortem findings. diovascular disease contributes 5.6% of mortality in 15 rs and above of the Zambian population (Ministry of Health tistics 1989 to 92). The higher percent shown in this dy is probably because of the small number of cases died.

cases were:-

CVA due to severe chronic hypertension 2 = (40%) of cardiovascular cases.

Pericarditis possible due to tuberculosis 3 (60%).

though the commonest cause of cardiovascular disease in Zambia due to hypertension (dept of medicine mortality meeting 93), this study the findings were 40% due to hypertension and 60% ricardial disease. In Table 9 case No. 9, the case of rinous pericarditis the exudate was organised and solidified the pericardium was so adherent to the myocardium and the ganised exudate such that even the Echo could not show the fference between the layers of pericardium, exudate and cardium. This gave the cardiologist the impression that the ss was all myocardium so the cardiac echo diagnosis was ertrophic cardiomyopathy.

GENITO URINARY SYSTEM (GUT)

ere were 2 (6.7%) cases of Genito Urinary disease. agruity was in 2 (100%) of the cases between antemortem and stmortem diagnosis. In hospital practice GUT disease nstitutes up to 4.1% of hospital admissions (Ministry of alth 1990 statistics). But its contribution to hospital aths is small so is not reflected in the national atistics.

GASTROINTESTINAL TRACT DISEASE

cases (10%) of gastrointestinal disease were encountered in

this study. In 2 (66.7%) cases the diagnosis was congruous, in 1 (33%) the diagnosis was not congruous. The Zambian national mortality for 1991 in adults 15 years and above shows GIT as contributing to 8.5% of total deaths (Bulletin of health statistics 90-92 Zambia Ministry of health). The department of medicine mortality reports put GIT at about 60%, which was mainly due to chronic gastroenteritis in HIV/AIDS patients (department of medicine mortality statistics 91, 92, unpublished).

The low number in this study is because the chronic GIT deaths are associated with long duration illness so the relatives refuse to consent for postmortem in such cases on emotional grounds.

CONCLUSION

In an analysis of 30 postmortems it was found that in 63.3% of them there was agreement between antemortem and postmortem diagnosis. Agreement was highest in the nervous system and lowest in the respiratory system.

Two cases of brain abscess needed special investigations with CT Scan. One case of nocardia brain abscess was found, this neurological diagnosis would be difficult to make in life. The

ding of norcardiasis brain abscess and pulmonary embolism is itary and emphasises once again the need to do regular post tem, "Death is able to assist life", Virchoff.

pite of the small sample size, certain perceptions have been firmed in this study. The high incidence of HIV albeit by nical criteria, the high incidence of tuberculosis and the h incidence of HIV positive patients.

agreement rate of 63.3% is perhaps low (between antemortem and tmortem diagnosis). The mean length of stay of medical in ients has been estimated to be 4 days (Bagshawe) this is not g enough to evaluate fully these rather ill patients. From erience, at the time, it took at least 2-3 days for lab ults of full blood count and chest radiology and 5-7 days to AFB sputum results from the study, we note that lab support sted in 12% of the patients.

63.3% agreement rate, the performance of UTH met with Gresham Turners estimates of reasonable quality of clinical diagnosis en the constraints.

OMMENDATIONS

proliferation of General Practitioners, self medication and calibre medical staff make Pyrexia syronymous with malaria,

this popular conclusion of diagnosis has made misdiagnosis a common place with frequent missing of such life threatening diagnoses as meningitis, tuberculosis, cerebral abscess etc.

All doctors, nurses and other health staff involved in patient diagnosis and treatment should therefore be conscious of fever or even what patients refer to as I have "malaria" so as to elicit other clinical features which may reveal that the patient has a different problem other than the popular diagnosis malaria

Clinical postmortems should be a regular feature of hospital practice at UTH so as to assist in medical auditing with the view of improving the quality of diagnosis.

DIX 1

8 TABLE OF COMPARISON OF ANTEMORTEM AND POST MORTEM DIAGNOSIS

EMORTEM MAJOR GNOSIS	MAJOR PM FINDINGS	PM FINDINGS UNPREDICTED DURING ANTEMORTEM DIAGNOSIS AND CARE	CLINICAL EVIDENCE OF ARC/AIDS ANTEMORTEM
ebrovascular ident epression 200/130mmHg History fall and collapse	-Heamorrhagic cerebrovascular accident; thickened left ventricle -Splenic rupture	Congruous	YES
ubdural Haematoma V Encephalopathy	-subdural haematoma	Congruous	YES
Ca cervix aria ause of Headache	-Multiple splenic infarcts, -dermoid cyst (R) Ovary -Stage 11 Ca Cx	Multiple splenic infarcts -Dermoid cyst (R) Ovary Congruous	NO

emortem and major dings and diagnosis	Post mortem findings and diagnosis	Unpredictable findings during antemortem	Clinical evidence of HIV/ARC antemortem
ronic Headache ptococcal ngitis meningitis	-Pericarditis, -Genelised Lymphadenopathy (Non- caseating) enteritis, - Tubercles in the Pia-arachnoid	Congruous	YES
ma? Cause ration Pneumonia eck stiffness Cerebral malaria	-miliary Tubercles in Pia-arachnoid no aspiration material in lungs	TB Meningitis Not Congruous	YES
ningococcal icaemia R/O erichsen rhouse syndrome Syndrome	-Acute adrenal haemorrahage -Acute meningitis (Pyogenic)	Congruous	NO
eningitis aria umonia/suppurative g disease	- Brain abscess -suppurative Lung disease	Congruous	YES

mortem and major ings and diagnosis	Post mortem findings and diagnosis	Unpredictable findings during antemortem	Clinical evidence of HIV/ARC antemortem
ningitis	Acute meningitis	Congruous	NO
ericarditis nodeficiency e	-Fibrinous Pericarditis -Tubercular Lymphadenitis -Pleural fibrosis with Adhesions	Congruous	YES
neumonia	_pneumonia -Meningitis	_Meningitis Congruous	YES
erebral malaria	_Cerebral Congestion -Pulmonary Oedema	Congruous	NO
epticaemia shock minated Intra- lar lopathy(L) pneumonia	_Acute Haemorrhagic -Pancreatitis	-Acute Haemorrhagic - Pancreatitis Not Congruous	NO
ericardial ion HIV Disease	-Empyema -Pericardial Effusion -TB Lymphadenitis	Congruous	YES

temortem and major ndings and diagnosis	Post mortem findings and diagnosis	Unpredictable findings during antemortem	Clinical evidence of HIV/ARC antemortem
. Lobar pneumonia xic Disease	-Contrictive pericarditis -Cardiac Cirrhosis	Not Congruous	YES
. Meningitis	-(R) Upper lobar lung consolidation -Caseating mediastinal lymphadenopathy -Multiple, Hard, nodular calcified splenic masses -Genital sores -Suppurative Tonsillitis	-Right upper lobar pneumonia -TB lymphadenitis -Splenic TB _Genital Sores _supportative Tonsillitis Not Congruous	YES
.Cerebral malaria	No macroscopically recognizable abnormality	Post mortem could not tell cause of death	NO

ortem and major ngs and diagnosis	Post mortem findings and diagnosis	Unpredictable findings during antemortem	Clinical evidence of HIV/ARC antemortem
eningitis	Acute pyogenic meningitis	Congruous	NO
eningococcaemia	Adrenal Apoplexy	Congruous	NO
ypertension congestive ac failure	_Congestive cardiac failure -Rheumatic Valvular -Mitral Valve Disease (stenosis)	Congruous	NO
ypoglycaemia ller's Diarrhoea aria	-Pulmonary Embolism -Chronic	Pulmonary Embolism Not Congruous	YES
cute Pyogenic gitis	_Acute pyogenic meningitis -Pleural Fibrosis	Congruous	YES
eningococcal caemia rgic Reaction g reaction	-Worms Infestation - Acute Adrenal Haemorrhage	Congruous	NO
ortem and major ngs and diagnosis	**Post mortem findings and diagnosis**	**Unpredictable findings during antemortem**	**Clinical evidence of HIV/ARC antemortem**

eningitis bral malaria	_Bronchopneumonia L/R Lung -Cases mediastinal Lymphadenitis due to TB	_Bronchopne-umonia, TB Lymphadenit-is Not Congruous	YES
Septicaemia with icaemic shock yticus	Fulminant colitis	Septicaemia Congruous	NO
Meningitis richsen house syndrome	Vomitus in the bronchi - Meninges normal - Adrenal normal	Cause of death could not be blamed on aspiration with certa-inity	NO
erebral Malaria ided onia	-Suppurative Lung Disease -Liver Cirrhosis	Not Congruous	YES
ortem and major ngs and diagnosis	**Post mortem findings and diagnosis**	**Unpredictab le findings during antemortem**	**Clinical evidence of HIV/ARC antemortem**
cute oenteritis	Acute Entero-colitis	Congruous	NO

.Chronic Febrile ıness	-Chronic Meningitis -Pleural Effusion _Acute Nephritis _Caseating Mediastinal Lymphadenopathy (Tuberculosis) -Left ventricular hypertrophy	-Chronic meningitis -Pleural Effusion -Acute Nephritis _Creating mediastinal Lymphadenitis - Ventricular hypertrophy Not Congruous	YES
. Hypoproteinemic dema ıal failure	-Renal Failure	No discrepancy	NO
.Syphilitic Parchy ıingitis Cervical Cord/Spinal ıor Posterior	Cerebral Abscess	Cerebral abscess Not Congruous	YES

APPENDIX 2

TABLE 9: CASES OF CASEATING MEDIASTINAL LYMPHADENITIS

PARAMETER	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6
General fever	M/29 Recurrent x3/52	M/39 Fever, at night x1/12	M/51 3/52 (40.5^{0C} on admis-sion	M/28 X2/52	M/29 1/12	M/49 6/12
Headache	Nil	Nil	Nil	X 2/52 continuous Frontal Throbbing	with feeling X 3/12 confused like he was going mad	NIL
WT loss	x 3/52	X 1/12	yes ?dura-tion	yes ?dura-tion	yes ?duration	yes ?duration

PARAMETER	CASE 1	CASE 2	CASE 3	CASE 4	CASE5	CASE 6
Past health treatment	Treated for MP +VE malaria, treatment repeated without good response		2/12 treated for malaria with CQ & fansidar	Treated with CQ as MP negative malaria	NIL	Fansidar, chloroquine without response
Nervous system Limbs complaints	Numbness of limbs 3/52	NIL	NIL	NIL	NIL	NIL
Confusion			1/7 talking Irrele-vantly	Inconsiste-nt		
Neck stiffness			++	++	+	

PARAMETER	CASE 1	CASE 2	CASE 3	CASE 4	CASE5	CASE 6
Resp. cough	Dry cough	3/52 cough with white sputum	3/52		1 week with too/ finger clubbing	6/12 dry & hiccups
Chest pain	(L) lateral pleuritic 4/7	Central				Central
Dyspnea	Exertional	Exertional			Crepts in (L) base posterior	Dyspnoea with (L) basal crepts
Others					Joint weakness	Diarrhoea on/off

Miscellenous	+ve history of joint swelling in childhood	watery diarrhoea 1/7 and oral thrush	nil	Vomiting with yellow vomitus Pallor severe	non-specific pustular crops of skin rash	cloudy CSF, adherent dura matter, mucoid exudate in pleural cavity
PARAMETER	CASE 1	CASE 2	CASE 3	CASE 4	CASE5	CASE 6

diagnosis, additional to mediastinal lymphadenitis	cirrhosis -Fibrinous pericarditis -Pleural fibrosis, pleural adhesions, clinical HIV	effusion Emphysema, Clinical HIV	Lobar Bronchopneumonia Genital Ulcer,	B/pneumonia, Pyelonephritis	e Lung disease, Liver cirrhosis HIV back ground	Meningitis, pleural effusion, Acute Nephritis thickened left ventricle

TABLE 10

Individual case records

CLINICAL DATA, DIAGNOSIS AND MANAGEMENT	ANTE MORTEM LABORATORY WORKSHOP	POST MORTEM GROSS FINDINGS	PM LABS
Case No 1 T.D F/60 Housewife sudden onset of aphasia -6 hours before admission, not known hypertensive, diabetic or cardiac disease. BP 150/80mm Power, tone in limbs -normal; face symetical (R) Facial palsy after 6 days. CVA? motor aphasis -Depression element treated with chloroquine.	— ECG -normal Mps -Negative HIV -Negative Blood -Sugar Normal	Brain soft (L) cerebral hemisphere; in infarated area; Small bleed in (L) parietal lobe. Grossly thickened L/R ventricular wall 36 mm thick; no valvular damage dilatation, Rupture of spleen with 200ml of blood in peritoneal cavity; Kidneys m -	

Case No 1 Cont..		Kidneys multiple scarring and contracted, splenic rupture DIAGNOSIS -CVA with evidence of -Cardiovascular changes -Compatible with chronic hypertension	

Case No 2 S.M F/42 Housewife Married with 2 children Headache & neck ache x 2 months. Proceeded by fall due to a slip. Bruise near (L) eye and temporal region, headache sudden on waking up, then memory lapses then drowsiness vertigo, slurred speech. Neck ache (L) side Herpes Zoster scar (R) inflammary drowsy with downhill trend then mild neck stiffness, brisk limbs reflexes, bilateral crepts in lungs (later) then death. DIAGNOSIS: Subdural haematoma HIV encephalopathy ?Cryptococcal, Meningitis, Toxoplasmosis	CSF -done N/sugar, No Microbes	Obese African Female <u>Skull</u>: Subdural Haematoma Herpes zoster scar (L) Inframammary ?HIV patient	-Subdural haematoma -Clinically ARC

Case No 3 H.M.J F/52 Housewife 3/52 H/O severe intermittent headache at vertex, 2 days prior to admission became associated with vomiting, Intermittent diplopia, Post coital PV bleeding, severe yellow/brown PV discharge. Cervix friable and bleeds on contact. Treated as malaria ?Diagnosis for headache	-Cervical biopsy * Poorly differentiated squamous cell carcinoma	SKULL/BRAIN (N) SPLEEN -multiple areas of infarcts & fibrosis (R) OVARY -dermoid cyst =ovarian teratoma UTERUS -CA CX stage 11 DIAGNOSIS Ca Cervix stage 11 -Ovarian Teratoma -Splenic Infarction	

M.M M/36 Married mechanic persistent generised dull headache for 2/12; fever on and off for 3/12. Watery diarrhoea on and off for 3/12 without blood or mucus. Weight loss; herbal medication before admission; confused with neck stiffness +++ Crepts (R) upper zone posteriorly. DIAGNOSIS: Chronic headache meningitis ?Cryptococcal meningitis ?TBmeningitis TREATED: Xpen 4 mega 6 hourly, Aspirin	Gross CSF-clear CSF LABS C/S - Neisseria Meningitides DIRECT SMEAR No organisms No crypto BIOCHEM Glucose 0.58mm/L Protein 2.12g/dl RBC 20-total 50 80% poly; 20% lympo blood; Urea 5.39	Gross: moderately wasted young adult African male HEART & PERICADUM Straw coloured effusion about 100ml of fluid. LYMPHNODES Internal lympnodes -Mesenteric, periaortic -Mediasternal, firm,grossly enlarged	

		matted but non-caseating. Inflamed small gut. BRAIN MENINGES No gross abnormality DIAGNOSIS -pericardial effusion, lymphadenopathy enteritis, meningitis (acute)	

D.M F/22 single,Unemployed Admitted ; H/O headache and fever x 3 days; Abdominal colics x 2 weeks Admission to Chingola Hosp. before transfer to UTH-no data on transfer. G.C poor; semiconscious, dyspnoeic; neck soft; no neurologic deficit. LYMPHODENOPATHY -Cervical. Chest - coarse crepitations bilaterally; latter - neck stiffness ++ kerning +ve DIAGNOSIS: unconscious patient ?aspiration pneumonia R/O cerebral Malaria Treated Xpen 2 mega 6 hourly; Quinine; Catheterised, intubated.	LP -CSF clear CSF Cells; WBC 310PHF 60% poly; 40% Lympho; RBCs - nil Organisms - nil Biochemistry; Sugar 0.48mm/l Protein 1.8g/l BLOOD Sugar - 7.37mm/l MP -negative HIV -	Slightly wasted young adult African female. BRAIN/MENINGES No gross abnormality. CSF -slightly turbid and straw coloured. LIVER: patches of fibrosis; LUNGS: Miliary consolidation patches in both lungs; KIDNEYS: Bilaterally contracted	

I.M F/48 Housewife One day history of headache and diarrhoea.Headache occipital and radiating to neck; fever, vomiting several times, became confused on the morning of day of admission; convulsion x 1 day before admission; conscious but confused, injected conjunctiva. BP & PULSE: Unrecordable; neck soft, kerning negative; chest-clear. Haemorrhagic sports on trunk later became generalised and purpuric. DIAGNOSIS: Meningococcal septicaemia R/O frederichsen waterhouse syndrome. TREATED -Xpen 4 mega 6 hourly; Hydrocortisone Oxygen,	CSF -Turbid No lab report	Well nourished adult African Female;Purpuric spots all over the body. LIVER: peticheal/ haemorrhages, LUNGS: Congested with blood fraoth on cut surface PERINEPHRIC REGION Bled ++ with haematoma & blood tracking along the;	

Oxygen, Dopamine, intubation; D/saline. Died six hours after admission		psoas muscle; ADRENAL GLANDS: Bilateral massive haemorrhages into the adrenal BRAIN & MENINGES-Normal CSF - turbid DIAGNOSIS: Acute adrenal apoplexy -Acute meningitis	

Case No 7 S.D M/50 S/NO.7 -Bilateral pedal Oedema x 3 weeks -Cough with yellow mucoid sputum, dynea and chest pain x3/52. -Chest pain worsened by cough (lateral) _Night sweats; weight loss; generalised convulsion; on admission then continuous. History of herbal medication positive; married with 5 children. Ill=looking; wasted, middle aged African male; P92: T 38^{0C}; Unconscious; BP 90/60; RR 20/min; dehydrated, noisy breathing; finger clubbing, bilateral pitting pedal oedema, neck resisting movement in all directions; Hyperreflexia	LP-clear CSF CSF: WBC 40/HPF; 90% Poly 10% Lynmphocytes RBC -Nil Organism No crypto, no growth;no organism BIOCHEM: Sugar 3.24 mm/l Protein 1.64g/dl BLOOD: WBC 7,900; Lympho 42% poly 59%	Wasted middle aged African male with pitting Oedema, multiple brain abscesses with greenish yellow pus. Meninges normal; LUNGS: Pockets of pus in (R) lower zone LIVER: patches of fibrosis scattered in both lobes of the liver.	

all limbs. DIAGNOSIS: Meningitis, malaria, pneumonia, suppurative lung disease RX: Quinine; chloramphenicol, xpen flagyl; phenobarbitone; valium		DIAGNOSIS: Brain abscess; suppurative lung disease.	

Case No 8

E.L M/16 S/NO. 8

Admitted for headache; fever x 4 days

Neckache x 4days; ill-looking, confused

T 38°C; neck rigidity ++

Kerning +ve

DIAGNOSIS:

Meningitis

RX Xpen 4 mega 6 hourly IV/IM

LP _Turbid

CSF

CSF: WBC

40/HPF

70% poly; 30%

Lympho

RBC 120/mm^3

GRAM STAIN

No organism

NIGROSIN

No crypto

BIOCHEMISTRY

Glucose 0.1

mm/l

Protein

6.28g/l

DIAGNOSIS

Partially

treated

GENERAL

Well-nourished young african male.

BRAIN/MENINGES

Greenish, yellow pus tacking along the meningeal vessels all over the brain.

DIAGNOSIS: Acute pyogenic meningitis

Case No 9

N.A M/29 S.No.9

Recurrent fevers x 3/52

Numbness of limbs x 3/52

Pedal Oedema, dry cough with (L) Lateral pleuritic chest pain 4/7; exertional dyspoea; Anorexia x 4/7; weight loss for more than 3/52; Recurrent fevers treated as MP-positive malaria with good response, but fever recurred +ve history of joint swelling in childhood. Thin, dyspoeic, febile, P84/min. no pedal oedema with initiaaly clear lungs, but eventually developed basal crepts, JVP became raised tarchycardia, pericardial friction rub, tender hepatomegally 2 cm.

E.C.G.

T wave inversion in precordial leads

X RAY CHEST

Prominent Bronchovascular markings in upper lung fields

L/R Cardiac shadow

GENERAL EXAMINATION

Wasted young adult African male.

LUNG: (L) lung adherent to chest wall; pericardium and diaphragm with fibrinous bands of adhesion.

HEART & PERICARDIUM: Thick, fibrinous greenish yellow coagulated

Fluid squeezed form exudate showed

A A F B 4+

Case No 9 Cont..

DIAGNOSIS: Pericarditis in immune compromised patient

exudate forming a 1.5 cm organises layer round all heart chambers. Pericardium stuck & inseparable from the exudate; liver enlarged with homogeneous patches of fatty necrosis.

DIAGNOSIS:

Fibrinous

Case No 9 Cont..		Pericarditis lymphadenitis -Pleural fibrosis with adhesions	
Case No 10 J.N M/68 S.No. 10 Fever x 1/52 Headache x 1/52 Cough with chest pain & white sputum x 1/52 LUNGS: Crepts (R) base posterior Neck soft-became stiff with the kerning afterwards DIAGNOSIS: Pneumonia TREATED x Xpen; Aspirin	Lp? Cloudy CSF CSF: WBC 830 RBC -Nil G/stain Gram -ve Diplococci NO crypto	Elderly African male well nourished LUNGS: red consolidation L/R LIVER: congested HEART: dilated L ventricle, Ventricle walls - normal BRAIN: Yellowish greenish gelatinous exudate covering all the	

Case No 10 Cont..		cerebral & cerebellar hemispheres. DIAGNOSIS: -Pneumonia -Chronic meningitis	

Case No 11			
T.M M/20 S.NO 11 Headache, fever, vomiting diarrhoea x 3/7 stopped talking on day of admission. Vomited worms day before admission.Herbal medication day of admission. Unconscious; T 390^{C}; Sweating; laboured resp; neck soft; kerning negative; decerebrate rigidity with extension of lower limbs; coarse crepts in all lung fields; then froathing foaming bloody secretions. DIAGNOSIS: Cerebral malaria; herbal toxicity; MP -positive; 5% dextrose; quinine.	Malaria slide- positive	NUTRITION _ good LUNGS: Hyperaemic froathing with blood on cut surface LIVER: congested BRAIN: Hyperaemic DIAGNOSIS: Pulmonary Oedema	Combined AM + PM DIAGNOSIS: Cerebral malaria with shock lung.

Case No 12 L.N F/15 S. NO 12 Abdominal pain x 3/12 colicky, severe diarrhoea on and off x 3/13; dysuria; weight loss, sweating, pleural rub (L) side of chest; Weak, wasted dehydrated, p 120/m; BP 120/7 went downhill till unrecordable; drowsy, not talking - went downhill till unconscious. Neck soft, kerning negative; pallor ++; chest (L) side pleural rub; abd distended; hypertympanitic; absent bowel sounds with shifting dullness. DIAGNOSIS: Shock due to septicaemia Disseminated intravascular coagulation coagulopathy; pneumonia (L) sides ileus.	Abd tap dark aspirate	Young adult African female slightly wasted. SKIN: active and healing multiple pustular dermatosis mainly on legs and arms. No scar of herper zoster. STOMACH: dilated but no other abnormality abnormality; liver-fatty	

Case No 12 Cont..		PANCREAS: large cyst at head of pancreas containing dark green fluid; BODY OF PANCREAS: necrotic with few normal areas no calcification. DIAGNOSIS:Acute haemorrhagic pancreatitis. ?diabetic ketocidosis	

Case No 13 A.M M/37 S. NO.13 3 weeks of productive cough with white sputum, central chest pain and exertional dyspnoea, associated with fever, night sweats and weight loss for 1 month; painful legs; watery diarrhoea on day of admission. Febrile, tarchycardia oral thrush; Lymphedenopathy DIAGNOSIS: Pericardial effusion in a patient with HIV disease (AIDS) TREATMENT: Ampicillin and later changed to Anti-TB treatment after cardiac echo.	X RAY CHEST: Globular cardiomegally CARDIAC ECHO Moderate pericardial effusion	Wasted young adult African male HEART & PERICARDIUM: Myocardium, valves, heart chambers - normal. Approx 200 ml of clear yellow fluid in pericardium. LUNGS & PLEURAL CAVITY: (L) Lung adherent to chest wall	

Case No 13 Cont..		organised fibrin Small amount of yellowish creamy pus in (L) pleural cavity. L/NODES: Mediastinal lymphnodes enlarged caseating. DIAGNOSIS:Empyema, pericardial effusion,caseating mediastinal lymphadenitis	

Case No 14 J.M M/34 S.NO. 14 5 months of ill health with fever, backache, swollen legs, then chest pains x 3 days before admission. Stopped talking 2 days before admission. Pricking (L) sided chest pain. Severe weight loss and poor appetite. Ill-loking wasted. Straight, sparse hair, pedal oedema plus jaundice. Brochial breathing (L) posterior - died 4 hours after admission. DIAGNOSIS: (L) lobar pneumonia toxic hepatitis		Wasted young African male jaundiced, bileteral pitting pedal oedema. HEART:Chambers venticle walls normal.L/NODES: Enlarged Liver-nutmeg appearance enlarged. DIAGNOSIS: Constrictive pericarditis. Cardiac cirrhosis	

J.Z M/51 S/NO. 15 Cough for 3 weeks, fever sorethroat x 2 weeks, genital sores for 1 day-pus discharge from the tonsils - talking irrelevantly day of admission. 2/12 previously treated with chloroquine and fansidar. Disorientated, unable to communicate. Neck-stiffness and kerning +ve, T40.5^{0}C. HEART & LUNG: Normal ABDOMEN: Normal GENITALIA: Balanoposthitis with shallow ulcers on glands; no inginal Lymphadenitis DIAGNOSIS: Meningitis TREATED: Chloromphenical, Xpen, 5% dextrose darrows.	LP - Failed	Middle aged African male LUNGS: Firm (R) upper lobe L/NODES: Mediastenal enlarged caseating on section. SPLEEN:Hard, nodular calcified multiple masses. GENITAL SORES: On glans penis, pus discharge from tonsils	

Case No 15 Cont..		DIAGNOSIS: Confluent Broncho-pneumonia, caseating lymphodenopathy, genital ulcer. -Suppurative tonsillitis Calcific splenic nodules	

Case No 16 M.P M/30 S. NO.16 Frontal Headache x 2/7; fever for 2/7. Dyspnea since morning of day of admission. GENERAL CONDITION: Very poor; unconscious; T 41^{0}C; neck rigidity + whole body stiffness; Kerning? Cyanotic; Bilateral coarse crepts, rapid resp. 40/min; BP 120/80; P120; coma deepened till death. DIAGNOSIS: Meningitis TREATED: Xpen 4 mu;6 hourly IV: oxygen Chloramphenical 500 mg QID IV intubated catherterised; N G suction	LP -Tubid CSF	Body of young adult African male. BRAIN/MENINGES: Pus ++ tracking along the meningeal blood vessels. DIAGNOSIS: Acute pyogenic meningitis	

Case No 17			
K.N M/54 S.NO. 17 Fever, shivering, vomiting x 1 day; stopped talking 4 hours before admission. Semi-conscious, neck soft, kerning-negative. Well hydrated. T39°C. PR 30/min regular, Lung clear, P100/m, BP 110/20. Abd.Liver-normal-spleen-normal DIAGNOSIS: Cerebral malaria TREATED: Quinine on standard regime for cerebral malaria regime +.	MP SLIDE: 4 +VE	Well nourished young adult African male BRAIN:MENINGHES.CSF Normal on gross examination LUNGS: HEART&ABD.- Normal LIVER,SPLEEN. KIDNEYS Adrenals : Normal DIAGNOSIS: No macroscopically recognisable cause of death	FINAL DIAGNOSIS Cerebral malaria

Headache; bodypains x1/7; spontenous sub-conjuctival bleeding both eyes.

GENERAL CONDITION: Very poor; Temp.Subnormal; Neck-soft; kerning +; BP-unrecordable; pulse-unrecordable;

CHEST: Coarse crepts all lungs resuscitated with hydrocortisone.

DIAGNOSIS: Meningococcaemia

TREATED: 1. Hydrocortisone 400mg 6 hourly

2. X -Pen 4 mega 6 hourly
3. Assisted respiration
4. 50% dextrose; normal saline

Case No 18 Cont..

male

BRAIN: Congested with peticheal haemorrhages: Meninges- no pus

KIDNEYS: Bilaterally Hyperaemic.

SUPRARENAL GLANDS: Internal haemorrhage in both adrenal glands

DIAGNOSIS: Adrenal apoplexy in a patient with meningitis with meningococcaemia

FINAL DIAGNOSIS: Frederichsen waterhouse syndrome due to fulminant Meningococcae-mia

J.S M/36 S/NO. 19 Difficulty in breathing x 2/7; palpitations x 2/7 symptoms started suddenly day before admission. Cough with white sputum; haemoptysis and chest pain,wife treated for Tuberculosis; well nourished young adult african male. BP 190/90; 160/60 jaundice +; mild pedal oedema; JVP rhythm dyspnoeic Crepts (L) bass; gallop DIAGNOSIS: Hypertension Acute CCF TREATMENT: -Frusemide -Oxygen -Slowk		Well built young adult african male. No scars, dermatoses on skin lymphnodes not palpable; HEART: Muscles - normal L/R Chambers dilated containing dark blood L/R side. Friable vegetation masses on mitral valves leaflets leaflets.	

Case No 19 Cont..		LIVER: Slate grey and grossly enlarged SPLEEN: Congested and enlarged DIAGNOSIS: Congestive cardiac failure. Rheumatic mitral valvlar disease	

case No 20 M.R F/35 S. NO 20 Brought to UTH gasping from Lusaka international Airport. Suddenly collapsed on the plane enroute Paris to Malagasy: Amnesic of incidence. No known similar past incidence, epilepsy, diabetes, hypertension. Succeesful resuscitation with 50% dextrose, adrenalin, Oxygen. Well nourished middle aged caucasian lady nurse. Initially unrecordable BP and pulse raised to 130/90 and pulse 150/min regular small volume; pupils, neck, kerning peripheral nerves; lungs, heart, abdomen-normal; developed severe diarrhoea. Further resuscitation started talking h	Blood sugar 20.93m/l	Young adult caucasian female, good nutritional state. SKIN: Ecchymosis on trunk, face & limbs LUNGS: Blood froath and very dark (cyanotic) blood in vessels. HEART VESSELS: Multiple large thrombi in pulmonary arteries	

Case No 20 Cont.. but 5 hours later suddenly collapsed and died while trying to walk to toilet. DIAGNOSIS: Hypoglycaemia; traveller's diarrhoea R/O malaria. Blood sugar; MP slide; urinalyis; FBC		arteries with blockage of blood inflow to the LUNGS, MYCARDIUM:- Normal SPLEEN: Patches of fibrosis. KIDNEYS:Multiple scarring with thick pus in renal pelvis DIAGNOSIS: Pulmonary embolism	

Case No 21 P.N M/35 S/NO.21 2/7 fever, headache, neckache; Occipital throbbing headache continous & radiating to the neck. Conscious, neck rigidity ++ Kerning +ve DIAGNOSIS: Acute meningitis -RX Xpen	LP CSF Tubid	Well nourished young adult african male BRAIN/MENINGES: Meninges -foul smelling cloudy CSF tracking along the vessels Fibrinous adhesions at base of the brain; L/R cerebral hemispheres adherent to arachnoid meninges. DIAGNOSIS: Acute meningitis; pleural fibrosis	

G.M M/35 S/NO. 22

2/7 of headache and fever; 1/7 of generised non-itching rash with hands turning blue; passing worms in stool. Drugs-cafenol from private clinic. Rhinitis, allergic skin rash. Purplish skin rash on thighs and soles; sub-conjuctional haemorrhage. neck soft; kerning -ve

T 380C, BP -Unrecordable. Clear chest; CVS - normal.

DIAGNOSIS: Meningococcal septicaemia. Allergic reaction

? drug reaction

TREATMENT: Xpen, Oxygen; Hydrocortison, Phenergan.

Well nourished young adult african female. Cyanosis of hands and feet.

Purpuric spots in palms, conjuctival Oedema & haemorrhages.

ADRENALS: Haemorrhage with haemotoma from both adrenals & tracking along psoas muscles. Worms in small gut.

FINAL DIAGNOSIS:

Fulminant meningococcaemia.

Bilateral adrenal Haemorrhage.

Acte adrenal frederichsen waterhorse syndrome

Case No 23 cont..

KIDNEYS: Large and inflamed.

BRAIN & MENINGES:

Macroscopically normal.

DIAGNOSIS: Aneamia;

Tuberculous;

Bronchopneumonia;

Case No 24

G.S F/26 S.NO 24

Unconscious on admission, referred from Kafue Gorge Hospital (100KM)with H/O severe diarrhoea. H/O being treated for measles in same ward with cholera patients. Received flagyl, septrin and tetracycline, gentamycin and chloroquine without success. Developed convulsion before referral. Unconscious with active convulsions, afebrile, pallor +, Res-laboured; BP & pulse-unrecodable; hydrat-good. Urine output-nil; Abd. distended. Stool mucoid bloody, CNS neck soft; Kerning negative. Died after 12 hours of admission.

Na+ 130

K+ 7.7

Cl 100

Urea 41.43

Creatinin 520

vmol/l

Young African lady of average body build. Severe inflamation of the colour starting for hepatic flexure or rectum. Lumen full of blood stained stool. Gut wall ulcerated.

DIAGNOSIS: Fulminat Enterocolitis.

Case No 24 cont..			
DIAGNOSIS: Dysentry, Encephalopathy. GIT perforation, Septicaemia,paralyticus ileus.			

Case No 25

P.Z M/29 S. NO. 25

Customs Officer. Drinking beer followed by blackish semisolid diarrhoea x 1/7 yellow vomits, x 1/7 ; headache, collapsed then noted to have stopped talking few hours before admission. Stayed with sister who had TB, semiconscious bilateral conjunctivitis, febrile, peticheal haemmorrhages on hard palate, BP, pulse unrecordable; neck soft; Kerning -ve. Died after admission.

DIAGNOSIS: Meningitis with Frederick Waterhouse syndrome.

Well nourished young adult African male.

few suppurative lymphondes size of pea, non caseating/calcific.

BRONCHI: Vomitus in the bronchi

?aspiration Pneumonia.

Case No 26 F.Z M/29 S.NO 26 Fever 1/12; diarrhoea 2/52; cough 1/52 unreliable history. C/O headache, feels confused like he is going mad. Weakness in all joints; took chloramphenical for diarrhoea 1st admission: disoriented, febrile, papular generalised skin rash, few crepts; bases (L) side of the chest post. Became more confused with slight neck stifness, Kernings +ve. DIAGNOSIS: Cerebral malaria (L) sided pneumonia. TREATED: Ampicillin, chloroquine.	CSF: CLEAR FLOW DRIPPING	Undernourished young adult african male. Clubbing of toes and fingers sparse straight fraiable hair. Numerous patches of fibrosis, in lungs and pockets of pus scattered in both left & right lung fields;

Case No 26 Cont..		LIVER: Multiple nodular fibrotic lesions firm to hard in consitency sze of pin head. Scattered throughout (L) & (R) liver lobes DIAGNOSIS: lung abscess, liver cirrhosis.	FINAL DIAGNOSIS Lung abscess -liver cirrhosis
Case No 27 L.N M/36 S.NO.27 Diarrhoea, vomiting x1/7 with waterly yellow stool; vomiting x 2 on day of admission; colicky abd.pain in left fossa. Dehydrated ++; conscious, T36^{0}C. mild tenderness left iliac fossa. Progression: Stool became smaller in volume but mucopurulent. DIAGNOSIS: Acute gastroenteritis; DD & Cholera; moderate dehydration		Young adult african male of moderately good nutritional state. COLOUR: Greenish stain of descending colour STOOL: Macroscopically yellow mucopurulent. DIAGNOSIS: Acute enterocolitis	

Case No 28 G.L M/49 S. NO 28 Fever & cough for 6/12; headache 3/12; ill for 6/12 started with fever, then diarrhoea on and off; stools yellow about 3/7; dry cough with central chest pain; incontinent of urine. Drunk herbs, fansidar, chloroquine, ampicillin without response. Febrile, chest clear, then headache, hiccoughs; more herbal medication then dyspnea, (L) basal crept. DIAGNOSIS: Chronic febrile illness		Fairly well-nourished middle aged african male. Cloudy CSF. LUNGS: (L) lung adherent to chest wall with clear colourless mucoid exudate in Pl cavity.	

Case No 28 cont..

KIDNEYS: Enlarged inflamed Pelvis R calyces appear normal

L/NODES: Multiple caseating mediastinal nodes.

HEART: (L) ventricle wall 3cm thick (L) vent. lumen -5cm at widest -diameter

Caseous L/nodes material smear AAFB 4+

DIAGNOSIS

-chronic meningitis

-Pleural effusion

-Mediastinal caseating -

Lymphadenitis

Case No 29

S.P M/39 S/NO. 29

Dysuria haematuria, frequency x 1/12; pedal Oedema; knee & elbow swelling 11/52; previously treated for PTB for 1 year. Married with 5 children. Alcohol-yes; smoking-yes; pedal oedema-bilateral pitting.

HAIR: brown discoloration; general body-non specific skin rash; hyper pigmented at various crop stages; BP 80/60; developed white deposits on face; vomiting; dry cough; fever; nose bleeding; oral; thrush; went down hill till confirmed dead after 2/52 in hospital. DIAGNOSIS: Hypoproteianaemia, oedema

? Urinary tract infection; HIV infect

URINE:

Red; cloudy

blood +3

Protein + 3

PH 6.5

Sp Gr.1.025

Pus cell

occasional

RBC Numerous

Epith

Occasional

BLOOD:

Urea 33.7ml

Creat.45m

FBC.Hb 6.8g

WBC 9.7 $x10^3$

ALK Phos. 262m

Severely wasted middle aged african male. White frost on face; L&R kidneys 1 &1/2 normal size. White granular deposits on the surface, cortex, medulla and calyces of the lower half in both kidneys. Ureters/urinary bladder & prostate-normal.

Case No 29 Cont.. ? Renal failure		normal. DIAGNOSIS: -Renal failure Ser- protein Total 4.533 G/dl Alb 1.3g/dl HIV + ve	

Case No 30 F.M F/36 S.NO 30 Headache initially frontal then occipital for months, then low grade fever also for months followed by single grand mal fit. Subsequently (l) hemiparesis and neck stiffness present on admission but resolved after about 5 days; eventually developed generalised resistance to neck movement in all direction except on extension and reflex spread (supinator-fingers) in both upper limbs. DIAGNOSIS: ? Syphilitic pachymeningitis ? Cervical/ Spinal cord tumours ?Posterior fossa tumour	VDRL +ve HIV +ve CSF _sugar 2.57 Bld sugar not done -WBC/RBC Nil _ GRAM _NO organism Nigr _No crypto	BRAIN: Multiple locules of greenish yellow pus in the cerebral and cerebellar hemispheres DIAGNOSIS: Meningitis	C/S : Nocardia grown

BIBLIOGRAPHY

1. Alison, Elliot,Namaambo, Luo,
Negative Sputum results in HIV positive patients witl
Pulmonary Tuberculosis (Unpublished Report)

2. Bagshawe
Patient mean stay on medical wards of UTH, 1990 Unpublishec
Report.

3. Bailey A, Hira SK, Parma 1989,
Kaposis Sarcoma in HIV Patients in Zambia. Zambia Medical
Journal Vol. 24.

4. Christopher R.W. Edwards, IANAD Boucher
Cerebral abscess PP887-888

5. Elliot Alison M, Nkandu Luo et al,
The impact of HIV on Tuberculosis in Zambia a cross
sectional study, British medical Journal Vol 301, 1st Sept
1990, PP 412-415.

6. Gresham G.A. , Turner A.F.
Post Mortem procedures (an illustrated Textbook) Walfe
Medical Publications LTD. Smeets- Weert. Holland 1979.

7. Hira S.K, Ngandu N, Wadhawan D., Nkowane B, Babook S, Kamanga J, Macuacua R, Mpohoa, Perine P.L,
Clinical HIV disease in Lusaka: Sensitivity, specificity, Predictive values, Medical Journal of Zambia, Jan '89 vol 24. PP 6-11.

8. Ketata,
TB treatment compliance UNZA Post Basic Nursing Student Projects (Unpublished Report)

9. Kibirige A. 1992
Meningococcal Meningitis Unresponsive to Crystalline Penicillin in a UTH. Patient Personal Communication UTH-Lusaka Zambia.

10. Marcus A Krupp, Stephen A, Schroder, Lawrence A. Tierney Jr.
Text Book diagnosis and treatment 1987.
Appleton & Lange
Norwalk, Connecticut, Los Altos California.

11. Hira S.K, Matondo P, L.M Sandala
Sexually transmitted diseases in Zambia, a review of trend from 1983-1987; Zambia Medical Journal Vol 24 Jan '89 PP3 5.4.

12. Medicine Department
UTH Mortality Statistics 89,90,91,92,93 (Unpublishe Report)

13. Ministry of health, Republic of Zambia.
Bulletin of health statistics 1989-92, Government Report.

14. Nicholus P.
Mobilizing against AIDS
Haward University Press, 1989.

15. Parera, Luo, Zumla,
Clinical and microbiological observations on non-typhoidal salmonellosis and infection with the human Immunodeficiency Virus in Lusaka, Letter The Lancet. Vol 336 P877.

16. Robert Berkow The merck Manual of diagnosis and therapy 13 edition 1977. Merck sharp and Dohme, Laboratories Rahway, N.J. USA.

17. Thomas Adams
Harrisons principles of internal medicine Eighth edition 1977,
Mc Graw Hill.
KOGAKUSHA LTD
TOKYO.

18. UTH Statistics Officer in charge, UTH statistical data, Hospital Annual report 1992 (Unpublished report).

19. Wadhawan, Hira S.K,
Tuberculosis and HIV in the medical wards
Zambia Medical Journal Vol 24 Jan 1990.

20. Watters DK,

HIV diseases in the surgical wards of the University Teaching Hospital Lusaka, Zambia.

Zambia medical Journal Vol 24 Jan 1990 P19.

21. WHO

Special Report on AIDS