SIELE LINDA CHEMUTAI

A RETROSPECTIVE STUDY ON THE USE OF ORAL HYPOGLYCEMIC AGENTS IN THE MANAGEMENT OF TYPE 2 DIABETES MELLITUS IN KENYATTA NATIONAL HOSPITAL FOR THE PERIOD 1ST JANUARY 2009 TO 31ST DECEMBER 2010.

SUPERVISOR: PROF. C.K. MAITAI

YEAR: 2011

Abstract:

According to IDF, the incidence of type 2DM continues to rise with projected world prevalence of 439 million adults by 2030. One of the major concerns with the diabetes epidemic is the expected increase in morbidity and mortality related to the complication of the disease. It is well established that improved glycemic control decreases the risk for development and progression of microvascular complications (retinopathy, nephropathy, and neuropathy) and cardiovascular disease which is a major mortality in people with both types of diabetes. Since oral hypoglycemic agents are the most widely used agents in management of type 2 DM, it is necessary to establish their efficacy in maintaining euglycemia hence reducing incidence and progression of complications.

Study objectives: The objectives of the study was to evaluate the use of oral hypoglycemic agents in the management of type 2 DM in KNH. The main concern was to determine the efficacy of these agents in maintaining euglycemia, and to investigate whether KNH has adopted the WHO guidelines in management of diabetes using these agents.

Methodology: The study was designed as a retrospective study of medical records covering the period 1st January 2009 to 31st December 2010. The study was conducted at the medical records department of KNH. The study was carried out on all files of type 2 Diabetes Mellitus patients available within the specified period of study. The total number of patients was 114. The relevant data entered onto a pre-designed data collection sheet.

Data Analysis: The raw data was analyzed based on the study parameters which include sex, age of patients at the time of diagnosis, the treatment regimens employed, HA1c levels, and complications arising from DM. The analyzed data was used to compare the management of type 2DM in KNH with the treatment guidelines recommended by CDC, WHO and the UKDPS group. Microsoft excel was sued in analysis of the data.

BARASA W. NICHOLAS

EVALUATION OF SEDATION AND ANALGESIA PRACTICES IN KENYATTA NATIONAL HOSPITAL’S CRITICAL CARE UNIT

SUPERVISOR: PROF. C.K. MAITAI

YEAR: 2011

Abstract:

Sedatives and analgesics are widely used in the Intensive Care Units. Their main use is aimed at
achieving comfort and tolerance of the ICU environment, to eliminate pain, anxiety, delirium and other forms of distress.

The challenged in provision of sedation and analgesia in the ICU are significant variations in the individual patients requirements and altered pharmacokinetic profiles in most patients. The latter may lead to accumulation of the drugs in patients (21).

The main objectives of this study was to evaluate sedation and analgesia practices in the critical care unit a Kenyatta National Hospital, a major referral hospital in the region. Specifically the study determined the indications for sedation and analgesia in ICU patients, the sedatives and analgesics used, how they are administered and the clinical conditions of the patients receiving these medications.

The study was hospital based with the critical care unit as the study site. The study involved patients admitted into the unit for a period of one month, starting from 27th June to 27th July. The data was collected using per-designed data collection forms and represented graphically and using tables and then analyzed.

The results obtained indicated that 25 out of 44 patients (57%) involved in this study were trauma patients while 19 (43%) had other medical conditions. No patients was sedated without analgesia, 17 patients (39) were on analgesia alone while 27(61%) were both sedated and given analgesics. Midacolam alone was found to be the common sedative used (11 patients-25%) while a combination of an Opioids and a benzodiazepine was the least used for sedation (3 patients-7%). Opioids used alone were the mainstay for provision of analgesia (27 patients-61%) with tramadol being the most common (19 patients-43%). This is in agreement with studies by Soliman et al (5). Sedatives were administered intravenously while analgesic were given by various routes depending on the specific patients requirements.

From the results obtained in this study, it was evident that sedation and analgesia is an important part in managing critically ill patients.

These results will be sued to optimize provision of sedation and analgesia in critically ill patients.

TEYA THOMAS MOMANYI

A REVIEW ON MANAGEMENT OF DIABETES MELLITUS IN ADULTS IN KENYATTA NATIONAL HOSPITAL

SUPERVISOR:  PROF. C.K. MAITAI

YEAR:  2011

Abstract:

Background: Diabetes mellitus cases are on the rise in Kenyan population. Diabetes mellitus can be defined as a group of metabolic disorders characterized by hyperglycemia associated with disorders of carbohydrates and fat. Type 1 diabetes occurs as a result of a deficiency of including following automine destructive of pancreatic beta cells. Type 2 diabetes occurs due to either reduced secretion of insulin or to peripheral resistance to the action of insulin.

Objective: The objective of this study was to review the management of diabetes mellitus in adult patients in KNH.

Study area: Kenyatta National Hospital

Study population: Data was obtained from files from January 2007 to December 2010.
Method: This was a retrospective study that was conducted by examination of Medical files. Statistical data was obtained from records department.

Results: There were diabetic patients. Out of 87 patients, 80 had type 1 diabetes while the rest had type 2. Type 1 diabetes was managed using mostly mixtard insulin. Type 2 diabetes was managed using mostly metformin. The most common complication of diabetes mellitus was diabetes keroacidosis representing 66.3% of the total complications.

NJOROG WAIRIMU LILY

ANALGESIC USE IN PAIN MANAGEMENT AMONG CANCER PATIENTS AT KENYATTA NATIONAL HOSPITAL

SUPERVISOR: PROF. C.K. MAITAI

YEAR: 2011

Abstract:

Cancer pain is one of the most common problems experiences by cancer patients. It can however be effectively managed but, due to lack of proper education, inaccessibility of the appropriate analgesics and negative attitude on the use of opioids to relieve pain in most cases it is poorly managed.

Goal of study: To improve the quality of pain management among cancer patients admitted at KNH by promoting effective and rational use of analgesics.

Objectives:

1. To describe the analgesics commonly prescribed for paid in cancer at KNH.
2. To determine the application of WHO pain relief ladder in cancer pain management at KNH.
3. To assess whether analgesics are administered as prescribed.
4. To describe the challenged that affect correct analgesic administration.

Methodology: This was a hospital based prospective descriptive study. It was carried out at the adult medical wards, cancer treatment centre ward GFD and gynaecology oncology ward 1B at KNH. Adults patients were randomly picked regardless of their gender and ages, were interviewed and their files and prescriptions reviewed. The nursing staff was also interviewed and the information recorded.

The study was carried out on Wednesday and Thursday between 2 p.m. and 4 p.m. for four weeks in the month of July 2011.

KARANJA LORNA WANGARI

COMPARISON OF THE PHARMACOLOGICAL AND ANTIMICROBIAL PROFILE OF THE WHITE SKINNED AND THE PURPLE SKINNED allium sativum (GARLIC)

SUPERVISOR: PROF. J.W. MWANGI

YEAR: 2011

Abstract:
This study was carried out to compare the pharmacological activity of the white and purple skinned garlic on the heart and the antimicrobial profiles. Thin layer chromatography of the chloroform and methanol extracts of both the white and purple skinned garlic was carried out, the pharmacological activity of both types of garlic on the isolated rabbit heart and their antimicrobial activities were screened and compared.

Thin layer chromatography of the methanol and chloroform extracts of both the white and purple garlic showed that they contained a number of components that were unique to each type of garlic.

Pharmacological activity on the isolated rabbit heart showed that both types of garlic have both chronotopic and ionotropic effects but the purple skinned one had effects that had a longer duration of action than the white skinned one.

Antimicrobial activity of both types was also done using the ethanol extracts and showed that the white garlic extract inhibited the growth of *Staphylococcus aureus*, while the purple did not show any significant inhibition of the same but showed significant inhibition of *Saccharomyces* species but the white one showed no significant inhibition of the fungus.

It is therefore evident that both the white and purple skinned garlic-*Allium sativum* have useful antimicrobial and antihypertensive activity. The purple skinned garlic had a longer duration of antihypertensive activity and better antifungal activity than the white one and the white skinned garlic had better antibacterial activity that the purple skinned one. Indeed further studies of comparing the pharmacological profile of these two types of garlic will be useful to establish which of the two is the more efficacious of the two.

**KAMARU ALISON**

**A STUDY OF THE COMPONENTS, ANTI-ASTHMATIC AND ANTIMICROBIAL ACTIVITY OF *IPOMEA OBSCURA* EXTRACT**

**SUPERVISOR: PROF. J.W. MWANGI**

**YEAR: 2011**

**Abstract:**

*Ipomea obscura* is a creeping plant found indigenously and widespread in tropical Africa. The whole plane except the roots i.e. the leave, flowers, stem and fruits was identified, dried at room temperature, powdered (milled) and extracted with ethanol and then sequentially with chloroform followed by methanol. Phytochemical were carried out for the powdered crude drug to determine the constituents of the plant. The plant was found to contain alkaloids and tannins. A TLC profile of the 3 extracts was then carried out i.e. chloroform and methanol extract to separate the various components. The chloroform extract was found to contain the highest number of components. The ethanol extract was then screened for various activities including anti asthmatic activity using the isolated guinea pig trachea using the capillary tube method in which histamine was used as a standard. Antibacterial activity and antifungal activity against *Staphylococcus aureus* and *Saccharomyces cerevisiae* using the Agar diffusion method measuring the inhibition zones of SAD and TSA which were compared to the controls gentamicin on TSA and nystatin on SDA. The plant showed presence of anti asthmatic and mild antibacterial activity in the ethanol extract. It showed no antifungal activity.

**NYAMBANE IRENE MOKEIRA**

**INVESTIGATION OF ANTIMICROBIAL ACTIVITY, THIN LAYER CHROMATOGRAPHY PROFILE, PHYTOCHEMICAL TESTS AND PHARMACOLOGICAL EFFECTS OF Tridax**
Undergraduate Research Projects - 2011
Published on Department of Pharmacology And Pharmacognosy (https://pharmacology.uonbi.ac.ke)

**procumbens EXTRACTS.**

**SUPERVISOR: PROF. J.W. MWANGI**

**YEAR: 2011**

**Abstract:**

The whole plant (*Tridax procumbens*) above ground was dried, powdered and sequentially extracted starting with chloroform followed by methanol. Extraction with ethanol was also done and the extracts used in pharmacological experiments. Phytochemical tests were done on the powdered crude drug to characterized the compounds in the plant. Tannins were found present in *Tridax procumbens*. The compound in the extracts were separated by thin layer chromatography and they exhibited qualitative differences.

The plants extracts were screened for antimicrobial activity against *Candida albicans* and *Staphylococcus aureus*. This was done by measuring zones of inhibition. The plant showed weak antifungal and antibacterial activity. Pharmacological effects were done on a rabbit ileum it showed reduced gut motility.

**NJOROGE ANASTASIA N.**

**INVESTIGATION O THE ANTIMICROBIAL ACTIVITY OF SEEDS AND ROOTS OF Carica papaya**

**SUPERVISOR: PROF. J.W. MWANGI**

**YEAR: 2011**

**Abstract:**

Ripe and unripe seeds, as well as roots of the male and female plants of *Carica papaya* were separately extracted by serial extraction using chloroform followed by methanol and reduced. Whereas amounts extracted from roots were not very different, there was a big variation in the extracts from ripe and unripe seeds by different solvents indicating differences in polarity of the compounds. There were also qualitative and quantitative differences of the components in the extracts as shown by the TLC profile. Antimicrobial activity was carried out by agar diffusion. All chloroform extracts except extracts of ripe seeds showed moderate activity against *Staphylococcus aureus* (bacteria) and *Saccharomyces Cereviciae* (fungi). All methanol extracts were inactive against *Staphylococcus aureus* but active against *Saccharomyces cereviciae*, except ripe seeds extract. Separate extraction has however, shown significant antimicrobial activity in all non-aqueous extracts of the seed and roots of the pawpaw plant. The MIC was small for *Staphylococcus aureus* and relatively larger for *Saccharomyces cereviciae*.

**ONYANGO JOSEPH ELIAS**

**ASSESSMENT OF TRENDS OF UTILIZATION OF ANTIRETROVIRAL DRUGS FOR ADULTS AT THE COMPREHENSIVE CARE CENTRE, KENYATTA NATIONAL HOSPITAL.**

**SUPERVISOR: DR K A SINEI.**

**YEAR: 2011**

**Abstract**

HIV/AIDS has become a prevalent problem in our society today. Initiation of antiretroviral therapy
has restored hope that the virus is not end of the road: that one can still live a productive life even when HIV positive. This prolonged survival has provided new challenges in the secondary prevention (treatment) of HIV as HIV has become a more chronic condition than acute infection. HIV patients have special problems related to both long term HIV infection and the myriad drugs are used to control it. Resistance has also occurred to some drugs by given strains of the virus necessitating change of drugs used by patients. This was a study carried out at CCC, KNH. It involved analysis of patient medical records to determine the number of patients, who had been changed from first line to second line ARV therapy from January to December, 2010 and the rate of this change in both male and female patients. The inclusion criteria was based on age (adults aged 15 years and above), both male and female. Patients aged below 15 years were excluded from the study. The data was analyzed using MS Excel and presented as graphs and tables. From the results obtained in this study, generally there was an increasing trend in the number of patients receiving ARVs from CCC, KNH from January to December, 2010 both male and female. The number of female patients of female patients at each particular month was approximately double that of male patients receiving ARVs on the same month. There was no significant variation in the number of patients on second line at the CCC, KNH, from January to December, 2010 both male and female. However, the number of female patients on second line ARVs was significantly greater than that of male patients on all the twelve months. The number of patients receiving ARVs from CCC as a percentage of total number of patients was 9.57% in February 2010 and the lowest percentage being 8.42% in May 2010. The average number of patients on second line ARVs as a percentage of total number of patients receiving ARVs from CCC, KNH from January to December 2010 was 8.82%. The average rate of change of the female patients from first line ARV therapy to second line ARV therapy was found to be 0.13% while that of male patients was 0.1424%. The duration for which the patients were on first line ARV therapy before they were changed to second line therapy varied greatly from 28 days to over 5 years. The major reason for change was resistance of the virus to the first line ARV regimen and as a result there was no control of the viral load by the first line ARV regimen.

SAMUEL OMONDI OJINO

ASSESSMENT OF THE OUT PATIENT MANAGEMENT OF HIV AND HIV-TB CO-INFECTION IN ADULTS AT THE KENYATTA NATIONAL HOSPITAL

SUPERVISOR: DR. ERIC M. GUANTAI

YEAR: 2011

Human Immuno-Deficiency Virus (HIV) is the virus that leads to the causation of Acquired Immune Deficiency Syndrome (AIDS). In 2004, there were 4.9 million new infections and 3.1 million new deaths due to HIV/AIDS, largely in sub-Saharan Africa and South East Asia. Nearly 40 million people are estimated by the WHO to be living with HIV. Out of this 40 million, more than 2 million are children living in sub-Saharan Africa.

Tuberculosis is an infectious disease caused by Mycobacteria tuberculosis. TB is the second leading infectious disease that causes death in the world after HIV. The WHO estimates that approximately 2 billion people are living with TB worldwide. New cases of TB reported annually are between 8 million and 10 million worldwide. Out of these, 2 million succumb and die annually. Out of the annual new cases, 10% develop active TB.

KNH is the major referral hospital in Kenya and hence it reflects the magnitude of this HIV-TB co-infection. This study was undertaken to assess the management of HIV-TB co infection at the KNH’s CCC. The study aimed at determining the proportion of HIV patients who are co infected with TB, to establish the protocol (if recorded) for the initiation of ART in patients on TB treatment and vice-versa, to establish the treatment regimens used in HIV-TB co infection, to establish the proportion of HIV-TB patients on cotrimoxazole prophylaxis, the dosage and the duration of this prophylaxis and finally to compare the management of HIV-TB co infection at KNH to national/international guidelines and recommendations.
The study design was a retrospective cross-sectional survey which involved the collection of required data from medical records at the KNH’s CCC. The required data was collected using data collection tables as appropriate. The study included 292 outpatients whose medical records were dated between 1\textsuperscript{st} June and 31\textsuperscript{st} December 2010.

PAUL NJUGUNA MWANGI

**PREVELANCE, MANAGEMENT AND TREATMENT OUTCOMES OF PEPTIC ULCER DISEASE IN PATIENTS ON ANTIRETROVIRAL THERAPY**

**SUPERVISOR:** DR. FAITH A. OKALEBO  
**YEAR:** 2011

**Abstract:**

Patients suffering from HIV/AIDS tend to suffer from many opportunistic infections during the various stages of the syndrome. The opportunistic infections range from bacterial, protocol, viral to fungal. These tend to receive adequately prompt attention from the medical practitioners because they are characteristics of the syndrome. However, these patients also tend to suffer from other disease that are not necessarily due to these pathogens but which may be due to metabolic and other pathological processes. One such disease is peptic Ulcer Disease (PUD).

These has not been particular focus on PUD in HIV/AIDS patients, neither has the prevalence of the disease in patients on antiretroviral been determined. There is need to determine the extent of occurrence of P.U.D. among HIV/AIDS patients and possible risk factors. There is also need to study the management of P.U.D. in these patients keeping in mind potential drug-drug interactions between antiulcer medications and antiretroviral drugs.

DAISY OGOYA

**EVALUATION OF THE HEPATOPROTECTIVE EFFECTS OF AJUGA REMOTA**

**SUPERVISOR:** DR. FAITH A. OKALABO  
**YEAR:** 2011

**Abstract:**

The plant *Ajuga Remota* is the most commonly used medicinal herb in the management of malaria. It has also been traditionally in the management of fever, colds and dermal infections. The plant is a common weed that is widely distributed in Kenya and is used in many communities in Kenya, among them the Kikuyu and Luhya. The plant extract has also been investigated for its antiplasmodial and antifungal activity. Ajugarin-1 and argosterol, components of the plant, have been found to have some activity against these pathogens.

However, much has not been done to determine the range of pharmacological effects of the drug in the body.

This study is therefore aimed at evaluating the protective effect of *Ajuga remota* on the liver tissue, especially to determine its effectiveness in reducing the progression of fibrosis induced by chemical agents. These chemical agents are carbon tetrachloride and Ally alcohol. Carbon tetrachloride and allyl alcohol cause hepatotoxicity by inducing certain factors such as TGT and protein kinase C, respectively, within the body, which drive the cell towards apoptosis or fibrosis.
However, the plant will first be evaluated for its hepatotoxicity effects and the type of changes that the extract may cause on the liver tissue. These will be compared to hepatotoxicity induced by carbon tetrachloride.

The data analysis for both hepatotoxicity and hepatoprotective evaluation will employ comparison of data obtained in the test with those of the control groups using Chi-square test and Student-t test.

The study to fill the knowledge gap on the additional pharmacological effects of *Ajuga remota* and probably provide another alternative drug in the prevention of hepatic fibroids, which has become highly prevalent and a major cause of morbidity and mortality in the world.

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