

CLINICAL PROFILE AND ECONOMIC COST OF CHRONIC HEART FAILURE IN IBADAN

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ABSTRACT

Background: the global burden of heart failure(HF) is increasing, estimated to affect 64 million people worldwide. There is also an increase prevalence and growing economic burden in Nigeria and sub-Saharan Africa. Therefore, heart failure cost data is important to measure the impact of disease burden on the society, and for informed economic and policy evaluations.

Objective: this study aims to estimate the direct and indirect cost of chronic HF in Ibadan.

Methods: A prevalence based, patients perspective bottom to top approach cost of illness study was conducted on 150 consecutive chronic HF patients who attends the cardiology outpatient clinic. Cost data was extracted from the hospital price lists and indirect cost was estimated using the human capital method. Data was analysed with SPSS version 20.0.

Results: A total of 150 chronic HF patients were recruited with mean age of 55.83 ± 15.47 . The males were 42.0%. The annual cost of care of CHF in Ibadan from patients' perspective was N77,239,744.00.(Int\$488,828.20). The direct and indirect medical cost of HF management was estimated at N49,286,744.00 and N27,953,000.00 respectively while the estimated annual cost per patient was N514,931.63.(Int\$3,258.85). Hospitalisation was a main direct cost driver(29.5 %) while caregivers cost was highest for indirect cost at 60% of the total cost of HF.

Conclusion: there is catastrophic cost associated with management of chronic HF in Ibadan. These have implications for patients who pay out-of-pocket, and the society. Policies to implement universal basic healthcare coverage will mitigate these burden, especially in low- and middle-income countries.

Keywords: Chronic heart failure, Economic burden, Direct and indirect cost.

OVARIAN RESERVE AND SEXUAL FUNCTION OF WOMEN WITH SICKLE CELL DISEASE

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ABSTRACT

Background: Medical conditions like Sickle cell disease (SCD) can limit the lives of affected women or reduce their quality of life. SCD may affect an individual's experience of sexual intimacy and potentially reduce their fecundability.

Objective: The study compared sexual function and ovarian reserve among reproductive-age women with SCD to haemoglobin AA women. The study also determined the validity of Antral follicle count (AFC) as a diagnostic tool for diminished ovarian reserve (DOR).

Methodology: This case-control study compares the ovarian reserve and sexual function of women with SCD aged 18-45 years with age-matched women with haemoglobin AA. Standardized questionnaires including Female Sexual Function index (FSFI) were administered, and blood samples were drawn in the early follicular phase. Serum Anti-Mullerian Hormone (AMH), Follicle Stimulating Hormone (FSH), and Oestrogen levels were estimated by the ELISA technique. An ovarian ultrasound study was also conducted for each participant.

Results: An equal number of women (46) were enrolled as cases and controls. About 17.4% of the cases are HbSC others are HbSS with a mean age of 28.9 ± 9.3 years (cases) and 29.0 ± 9.3 years (control). There is no significant difference in the frequency of sexual intercourse between the groups. The SCD group had significantly lower scores in domains of orgasm, sexual satisfaction, and overall FSFI scores. The relative risk of FSD among women with SCD was 1.18. The relative risk of DOR using AMH was 5.00 (0.68 – 41.15) and 1.37 (0.47 -3.00) using AFC. A significant correlation exists between AMH and AFC in the diagnosis of DOR. The sensitivity of AFC is 50.0% and the specificity is 88.2%

Conclusion: Women with SCD have a higher risk of sexual dysfunction and a higher risk of diminished

ovarian reserve. To diagnose DOR, AFC has moderate sensitivity and good specificity.

Keywords: Ovarian reserve, sexual dysfunction, sickle cell disease, diminished ovarian reserve, HbSS, HbSC

CLINICAL EPIDEMIOLOGY OF NASAL COLONISATION WITH *STAPHYLOCOCCUS AUREUS* AMONG PAEDIATRIC IN-PATIENTS AT THE UNIVERSITY COLLEGE HOSPITAL, IBADAN, NIGERIA.

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ABSTRACT

Background: Colonisation precedes *Staphylococcus aureus* (*S. aureus*) infections with associated high morbidity and mortality especially in hospitalised patients. *S. aureus* is the second leading cause of Hospital Acquired Infections (HAI) and death from resistant infections among hospitalised patients. Information to guide useful strategies such as decolonisation proven to control *S. aureus* infections is not available in this setting for paediatric in-patients.

Aims and Objectives: The study aimed to determine the prevalence of *S. aureus*; to identify the social-demographic and clinical risk factors and the susceptibility pattern of *S. aureus* isolates colonising the nares of paediatric in-patients at the University College Hospital, Ibadan, Nigeria.

Methodology: The study was cross-sectional, involving 385 paediatric in-patients aged less than 18 years. Nasal swab was taken from all patients within 48 hours of admission and analysed using conventional laboratory methods and the *S. aureus* isolates identified were further analysed using Analytical Profile Index for Staph (API Staph).

Results: *S. aureus* carriage prevalence was 7.8% and Methicillin Resistant *Staphylococcus aureus* (MRSA) prevalence was 2.1%. Risk factors identified for *S. aureus* carriage were: skin lesions ($p < 0.001$), eye discharge ($p = 0.035$) and allergy ($p = 0.0038$) with the absence of skin lesions protective of *S. aureus* carriage on multivariate analysis (OR=0.020; 95% C.I [0.007, 0.652]). *S. aureus* isolates showed good susceptibility to mupirocin (86.2%), clindamycin (79.3%) and ceftiofloxacin (75.9%); fair susceptibility to gentamicin (65.5%)

and poor susceptibility to cotrimoxazole (20.7%) and erythromycin (27.6%).

Conclusion: *S. aureus* carriage in this setting is 7.8% with the absence of skin lesion being protective of *S. aureus* carriage. The isolates showed good sensitivity to locally available antibiotics.

Keywords: nasal colonisation, staphylococcus aureus, analytical profile index for staph (api-staph), mrsa

PREVALENCE OF METHYLENETETRAHYDROFOLATE REDUCTASE C677T AND A1298C POLYMORPHISMS AND ITS ASSOCIATION WITH SOME VASCULAR COMPLICATIONS IN ADULT PATIENTS WITH SICKLE CELL DISEASE.

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ABSTRACT

Background: The burden of Sickle Cell Disease (SCD) is highest in sub-Saharan Africa with increased morbidity and mortality occurring as a result of SCD complications. These complications include vascular complications such as vaso-occlusive painful events, stroke, avascular necrosis, acute chest syndrome, priapism, retinopathy, pulmonary hypertension, nephropathy etc and they have been associated with co-inheritance of single nucleotide polymorphisms involving the methylenetetrahydrofolate reductase gene which encode methylenetetrahydrofolate reductase (MTHFR) enzyme, a rate limiting enzyme that catalyzes the irreversible reduction of 5,10-Methylenetetrahydrofolate (MTHF) to 5-Methyltetrahydrofolate (THF) a circulatory form of folate used in the remethylation of Homocysteine to Methionine. The absence of this reaction results in elevated plasma homocysteine which is known to be an independent risk factor for thrombosis, including cerebral, peripheral, and coronary vascular disease.

Objective: Due to paucity of studies describing the prevalence of MTHFR C677T and A1298C polymorphisms among adult SCD patients. This study is therefore aimed at determining the frequency of MTHFR C677T and A1298C polymorphisms and investigate their association with vaso-occlusive events and some vascular complications among adult patients with SCD in Ibadan, Southwestern Nigeria.

Methodology: This is a cross-sectional study involving eighty-seven HbSS and twenty-seven HbSC registered adult (18 years and above) male and female patients who attend Haematology Day Care Unit (HDCU) and Haematology Medical Out Patient (MOP) clinic in the University College Hospital, Ibadan. After a

written informed consent, a validated questionnaire will be administered. Samples will be taken into ethylenediaminetetraacetic acid (EDTA) and sterile bottles for DNA analysis and serum homocysteine assay respectively. The data obtained will be analyzed with SPSS package version 23.

Conclusion: This study will explore the common MTHFR genetic polymorphisms which are genetic modifiers that are potential therapeutic targets for future management of SCD.

SKIN WOUND CLOSURE OUTCOME USING TISSUE ADHESIVE VERSUS SUBCUTICULAR ABSORBABLE SUTURE AT ELECTIVE CAESAREAN SECTION IN UNIVERSITY COLLEGE HOSPITAL, IBADAN: A RANDOMIZED CONTROLLED TRIAL.

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ABSTRACT

Background: Skin wound closure is an integral step of caesarean section. Various skin wound closure techniques have been used. However, there is no definite evidence regarding the ideal method for skin closure during Caesarean section.

Aim: This study aimed to compare the use of tissue adhesive with subcuticular absorbable suture for skin wound closure, and determine patients' satisfaction and cosmetic outcome of each technique

Materials and Methods: It was a two-arm single-blinded superiority randomized controlled trial. Women who had elective caesarean section and met the inclusion criteria were recruited. The participants were randomized into either skin closure with Dermabond tissue adhesive (intervention) or Vicryl 2/0 sutures (control). A total of 192 participants were randomized in the study, with 96 participants in each arm.

Result: A total of 185 participants completed the study and were included in the analysis. The mean age of the participants was 32.4 (SD±5.37) years. About 88.9% had above primary level of education and mostly Yoruba by tribe. The patients' assessment of the cosmetic outcome of their surgical wound was significantly better for tissue adhesives ($p=0.008$) while

there was no difference when assessed by the plastic surgeon ($p=0.50$) using the findings from the POSAS. Also, there was no significant difference in the patient's satisfaction with their scar following each closure technique ($p=0.27$). Additional analgesia requirement in the first 24 hours after surgery ($p<0.001$) and the duration of skin wound closure ($3.32\text{mins} \pm 2.27$ for tissue adhesives; $6.52\text{mins} \pm 2.97$ for sutures; $p<0.01$) were significantly lower in the tissue adhesive group. There was no significant difference in the rate of wound complications in both groups.

Conclusion: The cosmetic outcome and patient satisfaction with tissue adhesive are not superior to the use of subcuticular sutures. Although, pain control and speed of skin wound closure were significantly better with tissue adhesives.

MANNOSE-BINDING LECTIN (MBL) SINGLE NUCLEOTIDE POLYMORPHISM IN ADULT SICKLE CELL ANAEMIA PATIENTS IN NIGERIA.

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Background: Sickle cell disease is an autosomal recessive disorder and a qualitative haemoglobinopathy. It is a genetic disorder of public health significance with Nigeria bearing a very large burden of the disease. One of the complications of the disease is the recurrent infections following defects in immunity. The Mannose-Binding Lectin (MBL) is a protein produced in the liver that mediates complement activation and very crucial in innate immunity. Its levels may be decreased in any genetic mutation affecting the MBL gene, leading alterations in innate immunity. Infections have been implicated in 20-50% of deaths in sickle cell disease especially in sub-Saharan Africa. It is therefore paramount to study the implications of this polymorphism in sickle cell anaemia patients as this may provide basis antibiotic prophylaxis, immunisation and provide further insight into genetic modifiers of the disease. Moreover, there have been no studies on the implications of MBL gene polymorphism in the sickle cell disease, in Nigeria.

Aim: To determine the presence and prevalence of single nucleotide polymorphism on exon 1 and promoter regions of the mannose binding protein gene on long arm of chromosome 10 in adult sickle cell disease patients

Methodology: It is a descriptive, cross-sectional study. A validated questionnaire will be administered. Socio-demographic data and anthropometric measurements will be taken from all subjects. Venous blood samples and DNA extraction will also be obtained for analysis

in all subjects. The data obtained will be analyzed with SPSS package version 20.

Expected Outcome: That there is possible presence MBL single nucleotide polymorphism in sickle cell patients with recurrent febrile infections.

Conclusion: This study will provide some insight into the relationship between the possible role of mannose-binding lectin gene mutation and infections in the sickle cell disease population.

RELATIONSHIP BETWEEN 2D-SHEAR-WAVE LIVER SONOELASTOGRAPHY AND SERUM HEPATITIS B VIRUS DNA VALUES IN PATIENTS WITH ASYMPTOMATIC CHRONIC HEPATITIS B INFECTION IN UCH, IBADAN.

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ABSTRACT

Background: Routine evaluation of individuals with hepatitis B virus infection is essential to guide management as well as to determine the need for commencement of treatment. Ultrasonography is a widely available and cost-effective imaging technique, and with integration of two-dimensional shear wave elastography (2D-SWE), measurement of degree of liver fibrosis can be determined. This study aimed to determine the relationship between 2D-SWE measurements and serum hepatitis B virus DNA values in patients with asymptomatic chronic hepatitis B infection in University College Hospital, Ibadan.

Methods: This was a descriptive cross-sectional study of 147 asymptomatic patients with CHB infection diagnosed during routine medical screening at the University College Hospital and who have known HBV DNA values.

Results: All the participants were HBeAg negative and Anti-HBe positive. The average HBV DNA value was 134.3 IU/mL (IQR: 0.0; 1410.2 IU/mL), while the average duration of CHB infection since diagnosis of the participants was 15 months (IQR: 9.0; 32 months). Serum HBV DNA level ≥ 2000 IU/ml was detected in 23.2% of the participants. On 2D-SWE, F_1 and F_2 levels of fibrosis was detected in 0.70% and 2.0% of the participants respectively. Degree of liver stiffness

showed significant positive correlation with HBV DNA level ($r = 0.209$, $p = 0.011$) and duration of CHB infection ($r = 0.193$, $p = 0.019$) respectively among asymptomatic CHB participants.

Conclusion: Two-dimensional shear wave elastography can be included as a tool for the routine evaluation and monitoring in patients with CHB infection.

CORRELATION OF SHOCK INDEX AND SERUM LACTATE IN CHILDREN WITH SEPSIS AT THE UNIVERSITY COLLEGE HOSPITAL, IBADAN

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ABSTRACT

Background: Sepsis is a life-threatening condition with organ dysfunction. Both lactate and shock index are severity markers in sepsis. Lactate assay is limited by cost in developing countries while shock index (SI) is an easily accessible inexpensive clinical bedside tool.

Objective: This study evaluated the correlation between SI and serum lactate in children with sepsis.

Methods: This cross-sectional study examined the SI and lactate values of 102 children with sepsis aged 1 month to 15 years at the University College Hospital, Ibadan. Heart rate was by manual auscultation and blood pressure measured with an automatic sphygmomanometer. Lactate was analysed by the ABL800 FLEX[®] blood gas analyser. Statistical significance was set at $p < 0.05$.

Results: There was a significant weak positive correlation between shock index and serum lactate ($r_s = 0.255$, $p = 0.010$). Shock index could predict septic shock in infants aged < 1 year (AUC of 0.868, 95% CI: 0.731-1.006) and children aged 1 to < 12 years (AUC of 0.714, 95% CI: 0.554-0.874) at cut off values of 2.3 and 1.3 respectively. Serum lactate could predict septic shock in adolescents aged ≥ 12 years (AUC of 0.869, 95% confidence interval: 0.709-1.000) at cut-off of 2.5mmol/l.

Conclusion: This study demonstrated a significant positive correlation between shock index and serum lactate. Shock index can be used as an inexpensive screening tool in children at risk of septic shock.