

Conference proceedings for the 15th scientific conference of the society of experimental and clinical anatomists of nigeria (SECAN), “ABRAKA 2016”

On the 22nd to 24th of March, 2016, the Society of Experimental and Clinical Anatomists of Nigeria (SECAN) met in their Annual general meeting and Scientific conference at the Delta State University, Abraka. Highlights of the gathering were the opening ceremony with Keynote address presented by Professor PS Igbigbi. The address was on the theme of the conference: Forensic Science in Developing Countries: The Nigerian Perspective. Professor Igbigbi pointed out the need for Anatomists to be in the forefront of Forensic Science Education in Nigeria.

Professor T.W Jacks spoke on the Sub-theme of the conference: Career prospects in anatomy. In his presentation, he illuminated numerous specialty areas in Anatomy that have not been explored as a potential Career path for Anatomists in Nigeria. It was indeed an eye opener for our teaming graduates.

In a welcome address by the President of SECAN, Professor Hakeem B. Fawehinmi, the beautiful achievements of SECAN during his two-year tenure were presented. He highlighted the success recorded by the society in expanding and making more relevant, based on current best practices, the curriculum of our undergraduate programmes in Anatomy. He further stated that having succeeded in registering SECAN with the Corporate Affairs Commission, it will provide the Society with the necessary impetus and legal backing to forward a Bill to the National Assembly to amend the Anatomy Act so as to address contemporary issues such as the Establishment of an Anatomy Council that will regulate the practice of Anatomy as a profession in Nigeria, define a career path for Anatomists outside the mainstream academia, such as morticians, demonstrators, curators, museum scientist, with the Ministry of Establishment and look into Cadaver Procurement. Also, a list of Professors of Anatomy in Nigeria and their areas of specializations is to be forwarded to the regulatory bodies of Anatomy and Medical Education in Nigeria. Attendance to SECAN Conferences now attracts 10 Continuing Medical Education (CME) units. This will encourage participation by medically qualified members to SECAN activities as it facilitates the renewal of their Annual Practicing License with the MDCN, and will boost the revenue generation drive of the Society. These achievements were received with boundless joy by all Anatomists. He attributed the success of his tenure to hard work, team work of members of the SECAN Exco and support from all members of the Society.

Other dignitaries present at the ceremony include Vice-Chancellor, Delta State University, Professor VF. Peretomode, represented by the Deputy Vice-Chancellor Academic, Professor A.E. Anigala and Provost, College of Health Sciences, Professor PN. Ebeigbe.

During the Annual general meeting (AGM), there was a keenly contested bid for hosting right. After interested institutions made their presentations, Osun State University was elected to host SECAN AGM/Scientific Conference in 2017 while Nnamdi Azikiwe University was elected to host SECAN AGM/Scientific Conference in 2018. Also being an election year, a new set of executives were elected by the AGM. The members of the new Exco include:

Prof. CIP Anibeze - President
Dr. AI Udoaka - Vice President
Dr. EA Esom - Secretary General
SC Okoseimiema - Asst. Secretary General
Dr. EI Odokuma - Treasurer
Dr. SA Musa - Publicity Secretary
Dr. Ogugua Egwu - Chairman, Editorial Board
Prof. FC Akpuaka - Chairman, BOT
Prof. HB Fawehinmi - Ex Officio

Election into the SECAN council will be in the next council meeting.

As part of the Society's tradition of honouring members who have been noble Ambassadors of SECAN in their respective institutions, the following members were recognized and appreciated:

1. Professor Blessing Didia, a one-time President of SECAN who is the current Vice Chancellor of Rivers State University of Science and Technology (RSUST)
2. Professor Hakeem B. Fawehinmi, the immediate past President of SECAN who was recently elected as the Deputy Vice Chancellor, University of Port Harcourt
3. Professor Okwudili Udemezue, the immediate past Vice President who was also recently elected as Dean, Faculty of Basic Medical Sciences, Nnamdi Azikiwe University, Nnewi Campus
4. Dr Emmanuel I. Odokuma (Associate Professor), the current Treasurer of the Society who is the Dean of Faculty of Basic Medical Sciences of Delta State University, Abraka (DELSU)
5. Dr. Ugochukwu G. Esomonu (Associate Professor), Elected Dean of Faculty of Basic Medical Sciences and Head of Campus, Cross River University of Technology, Okuku Campus.

During the Scientific sessions, quality academic presentations of invaluable scientific findings were made and are being published in the next section of this issue. We hope that 'OSUN 2017' will be quite explosive.

Ogugua A. Egwu PhD
Editor-in-Chief

Abstracts for The Secan ABRKA 2016 Conference

SA_001 Absence of the musculocutaneous nerve in the right upper extremity: An unusual anatomical variation with potential clinical relevance

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Neural variations of the brachium constitute a significant anatomical and clinical entity. Variations in median and musculocutaneous nerves are common; however, the total absence of the musculocutaneous nerve (McN) is very rare. The present report is on the absence of the McN observed in the right upper extremity of a middle-aged Nigerian male cadaver during routine educational dissection in the Department of Anatomy, Ebonyi State University, Nigeria. We observed three separate branches from the median nerve innervating the coracobrachialis muscle, biceps brachii, and brachialis muscles. The muscles that are usually innervated by the McN were innervated by the median nerve in this case. Also, the longest and more distal of these branches (branch to brachialis muscles) pass between the biceps and the brachialis muscle. In the cubital fossa, it lies at the lateral margin of the biceps tendon where it continues as the lateral cutaneous nerve of the forearm. The presence of this anomaly should be considered during surgical interventions and clinical investigations of the arm as this may help plan a surgical procedure in the region of axilla and the arm, traumatology of the shoulder joint, and plastic and reconstructive repair.

Key words: Brachial plexus, median nerve, musculocutaneous nerve, variations

SA_003 Preliminary studies on hepatic injury in an art model: Evidence from interactions with *Hypoxis hemerocallidea*

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As the roll-out of antiretroviral therapy continues to drive downwards morbidity and mortality in people living with HIV/AIDS (PLWHAs), organ toxicities (especially the liver) are frequently becoming a major concern for researchers, scientists and healthcare planners. This study was conducted to investigate the possible protective effect of *Hypoxis hemerocallidea* (HH) against highly active antiretroviral therapy (HAART)-induced hepatotoxicity. A total of 63 pathogen-free adult male Sprague-Dawley rats were divided into 9 groups and treated according to protocols. While no mortality was reported, animals treated with adjuvant HAART and HH recorded least% bodyweight gain. Significant derangements in serum lipid profiles were exacerbated by treatment of with HH AP as LDL (increased $p < 0.03$), triglycerides (increased $p < 0.03$) with no change in total cholesterol levels. Adjuvant HH with HAART caused reduction in LDL ($p < 0.05$ and 0.03), increased HDL ($p < 0.05$) and TG ($p < 0.05$ and 0.001 for HH100 and HH200 doses respectively). Markers of liver injury assayed showed significant increase ($p < 0.003$, 0.001) in AST in HH alone as well as HAART+ vitamins C and E groups respectively. Adjuvant HAART and HH and vitamins C and E also caused significant declines in ALT and ALP levels. Serum GGT was not markedly altered. Disturbances in histopathology ranged from severe hepatocellular distortions, necrosis and massive fibrosis following co-treatment of HAART with vitamins C and E as well as HAART alone. These results warrant caution on the adjuvant use of HH with HAART by PLWHAs as implications for hepatocellular injuries are suspect with untoward cardio-metabolic changes.

Key words: Art model, *Hypoxis hemerocallidea*, liver

SA_010 Estimation of body composition parameters using weight, body mass index and sum of skin fold in Rivers Women, Nigeria

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Aim: This study intends to estimate body composition parameters from weight, BMI, iliac and biceps skinfold thickness in women from Rivers state of Nigeria. **Materials and Methods:** 401 females participated in this study. Weight (WT) and height (HT) were measured using weighing scale and stadiometer respectively. Body mass index (BMI) was calculated as $WT (kg) / HT (m^2)$. Skinfold caliper was used to measure the iliac (ISF) and biceps (BSF) skinfold thickness. Body composition parameters (BCP): muscle mass (MM), total body water (TBW), percentage body fat (% BF), and basal metabolic rate (BMR) were measured using bio impedance analyser (Tanita, Japan). A correlation test and linear

regression test was used to analyse results using SPSS version 18. **Results:** The correlation coefficient (r) between WT and BCP; BMI and BCP were positively significant except for TBW which showed negative correlation, indicating a strong relationship between WT, BMI and BCP. Also, the r between BSF and BCP; ISF and BCP were significantly positive except for TBW which showed negative correlation, indicating a strong relationship between BSF, ISF and BCP. The highest r was between weight and %BF, followed by the r between BMI and %BF, indicating that weight provides the highest reliability in predicting BCP. The highest correlation r for Rivers women, between the dependent variable (% BF) and independent variable (WT) was 0.79 ($P < 0.000$) while the least was $r = 0.38$ as seen between MM and TSF. **Conclusion:** Weight can be used to predict measured BCP. Weight also provides a better and precise means of estimating BCP.

Key words: Basal metabolic rate, bioimpedance analyser, muscle mass

SA_013 Comparative neuroprotective effect of *Celosia argentea* Linn and Vitamin E on mercury-induced oxidative stress on the cerebrum and cerebellum of adult male Wistar rats (*Rattus norvegicus*)

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Mercury is a heavy metal common in our environment and has been used for many years in medications, cosmetics and germicidal solutions, exposing humans to its toxicological effects which include neurotoxicity and neurodegeneration through toxic increase in reactive oxygen species (ROS). This study was carried out to (1) investigate the ameliorative effects of aqueous extract of *Celosia argentea* (AECA) in mercury-induced oxidative stress in the brain of adult male Wistar rats and (2) to compare any such effects with those of a standard antioxidant vitamin E (VitE). AECA is a plant rich in phenol, flavonoids, saponins and alkaloids with a high antioxidant activity and free radical scavenging capacity. Five adult male Wistar rats per group were assigned to 5 treatment groups ($n = 25$). Group 1 was control group with normal food and water; Group 2 had 4 mg/kg of $HgCl_2$ only; Group 3 had 400 mg/kg of AECA only; Group 4 had 4 mg/kg of $HgCl_2$ and 400 mg/kg of AECA; Group 5 had 4 mg/kg of $HgCl_2$ and 500 mg/kg of VitE. The rats were orally administered their respective doses once every other day for 14 days. Evaluations were made for gross morphological, histomorphological, neurobehavioural, haematological, and biochemical parameters (malondialdehyde (MDA), reduced glutathione (GSH), superoxide dismutase (SOD) and catalase (CAT)). AECA attenuated the mercury-induced oxidative stress in the brain of the animals by significantly decreasing the level of free radicals and increasing the activity of GSH and SOD enzymes in the brain. The extract also ameliorated

neurodegenerative effects in the cerebral and cerebellar cortices of the rats as evidenced by the histological slides which showed more viable cells on the pyramidal and purkinje layers of the cerebral and cerebellar cortices of the AECA treated groups when compared with the $HgCl_2$ only group. The behavioural, gross morphological and hematological parameters were not affected through the groups. AECA appeared to have greater ameliorative effect on the mercury-induced oxidative effect when compared to vitE as evidenced by the increased level of GSH and SOD in the AECA treated group, however VitE appeared to be more potent than AECA in protecting the brain from mercury induced neuronal damages as evidenced by the histomorphological parameters. The results suggest the protective effects of *Celosia argentea* Linn against mercury-induced oxidative cerebral and cerebellar injuries.

Key words: *Celosia argentea* Linn, cerebellum, cerebrum, mercury, oxidative stress

SA_015 Perception to cadaver dissection among students of basic medical sciences

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Human anatomy is the science concerned with the study of the structure of the human body. It is one of the major courses studied in the school of health sciences. Cadavers are used in teaching human anatomy via dissection. However, dissection has some adverse effects on students. Cadavers are gotten through body donation, unclaimed bodies from prisons, corpse from condemned criminals may be used as well. Questionnaires was used to collect relevant data from 390 dissecting students in the faculty of basic medical sciences delta state university Abraka from. Results confirmed a favourable attitude to dissection and its preference to prosection and use of anatomical models. 90.2% agree that dissection is morally right, only 17.2% and 11.3% want dissection to be replaced with prosection and use of anatomy models respectively. Smell of formalin was the major source of trauma affecting 96% of the dissecting students. Cadaver dissection still remains the most preferred and indispensable teaching tool for human anatomy, despite its adverse effects on students.

Key words: Anatomy, cadaver, dissection, perception

SA_018 Identification of close relatives using the mini-short tandem repeat markers D9S1122 and D14S1434

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The forensic identification of genetically closely related human individuals among has often been difficult, because they often have strong phenotypic concordances. Short tandem repeats (STRs) have been used in kinship tracing, identifying missing person and skeletal remains, paternity testing and mass disasters victim identification. This research was performed to determine the efficiency of the miniSTRs D14S1434 and D9S1122 in differentiating between closely related persons in a Nigerian sample. The sample consisted of twelve individuals who self-identify as relatives (a set of three brothers, two cohorts of two cousins and one set of uncle-nephews). DNA extracted from blood was amplified using primers for the two miniSTR loci. Optimal amplification parameters were determined. The PCR products were resolved on 4% Agarose gel with a 20bp ladder. Allele sizes were determined by comparing with the ladder. An initial denaturation for 3 min at 95°C with an annealing temperature at 57.4°C and 30 cycles of PCR produced the best result. Different alleles of the markers D9S1122 (97, 105, 117) and D14S1434 (70, 78, 86, 94, 98) were identified in the samples studied with sufficient heterozygosity to allow identification of each individual. The miniSTRs typing is a robust genetic tool for identifying family relationships and will be an important marker for forensic work and DNA typing in Nigeria.

Key words: Forensics, identification, repeat markers

SA_029 Immunohistochemical assessment of neuron specific enolase activity in amygdala of female Wistar rats treated with combined oral contraceptive pill

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Background: Combined oral contraceptive pill (COCP) contains both estrogen and progesterone. Many women have concerns about the side effects of oral contraceptives and very little is known about the impact of synthetic steroid hormones on cognitive abilities, brain structure and function. This study was to assess neuronal degeneration in the amygdala of female wistar rats treated with COCP using neuron specific enolase method. **Materials and Methods:** Fifty-six female Wistar rats weighing 180-220 were equally divided into seven groups. Group A was the control group and the animals did not receive any treatment while groups B1, B2, C1, C2, D1 and D2 were the experimental groups. Groups B1, C1, and D1 were treated with 0.002 mg/kg levonorgestrel plus 0.0043 mg/kg ethinyl estradiol for 21, 42 and 63 days respectively while groups B2,

C2 and D2 were treated with 0.004 mg/kg levonorgestrel plus 0.0086 mg/kg ethinyl estradiol for 21, 42 and 63 days respectively. 24 hours after the last administration for each group, the rats were anaesthetised using 40 mg/kg ketamine intraperitoneally. The brain was perfused transcardially with 10% buffered formalin. The whole brain was excised and fixed in 10% buffered formalin for 48 hours. The amygdala was dissected and processed for paraffin sectioning. Sections were stained with antibodies specific for neuron specific enolase using antigen retrieval method and colour reaction involving 3'3'-Diaminobenzidine tetrachloride (DAB) in peroxidase antiperoxidase method. **Results:** Amygdala of control group revealed high enolase activity, groups B1, B2, C1 and C2 revealed reduced enolase activity while groups D1 and D2 revealed increased enolase activity. **Conclusion:** These results revealed that COCP reduced neuron specific activity in the amygdala and the effect was not duration dependent

Key words: Amygdala, combined oral contraceptive pill, neuron specific enolase

SA_031 Exit pattern of sciatic nerve: A cadaveric study of Nigerians

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Despite the clinical description of sciatic nerve emergence from the gluteal region, it is believed that variations are eminent. This study was therefore conducted to investigate the exit patterns of the Sciatic Nerve (SN) in Nigerian cadavers. 282 gluteal regions from 141 cadavers were dissected using standard protocols (designed in Cunningham's dissection manual [15th Ed.] and Finley's Interactive Cadaveric Dissection Guide). There were no significant differences in the exit pattern of SN between the left and right gluteal regions. However, the nerve showed significant variations in exit pattern between cadavers. In two hundred and sixty five limbs (94%), the Sciatic nerve emerged as a single trunk at the inferior border of the piriformis muscle. While in one (1) limb (0.4%), it emerged divided at the inferior border of piriformis muscle. In another limb (0.4%), it emerged as a single undivided nerve that pierced the piriformis muscle. When SN divides in the pelvis, the common fibular nerve emerged piercing the piriformis muscle, while the tibial nerve passed inferior to the muscle in 15 limbs (5.32%). Exit patterns were found to be symmetrical in most cadavers, but asymmetry was observed between cadavers. Findings from this study have shown that the exit pattern SN varies in Nigerians. Therefore this study will find its relevance in many areas of medical and surgical practice including Orthopaedics, Neurology, physical therapy, Anaesthetics and pain management. Data from this study will also assist as baseline for further research on the clinical anatomy of the SN in Nigeria.

Key words: Cadavers, exit pattern, gluteal region, sciatic nerve

SA_032 Adult arm span to height relationship in Jos

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Introduction: The purpose of this research was to determine if there exists a relationship between the height and arm span of adults in Jos and to derive equations that will be used to predict height from arm span and vice versa. With these equations the height of a young adult can be predicted in conditions where height cannot be measured (such as in amputees patients with spinal deformities and forensic studies). **Materials and Methods:** This was a descriptive, cross sectional study examining the relationship between standing height and arm span. Standing height and arm span of 378 healthy students (226 males, accounting for 59.8% and 152 females, accounting for 40.2% of the total sample) were measured. **Results:** Mean age of the subjects was 24 ± 4 years. Mean height and arm span of males was 172.3 ± 9.7 cm and 186.9 ± 9.0 cm for males and 162.4 ± 6.4 cm and 174 ± 8.2 for females, respectively. Correlation regression analyses done using number cruncher statistical system (NCSS/PASS 2006 Dawson Edition, USA) showed that arm span could predict height in females by 100% i.e., $R^2 = 0.1$ ($P < 0.05$) and height could predict arm span by 100% also in female i.e. $R^2 = 0.1$. In males, arm span could predict height by 99.99% ($R^2 = 0.9999$) and height from arm span 99.85% ($R^2 = 0.9985$). Irrespective of sex, arm span could predict height 99.99% ($R^2 = 0.9999$) and height can predict arm span of adults in Jos by 99.79% ($R^2 = 0.9979$). Regression equations were derived to predict height from arm span and vice versa for female and male adults in Jos as well as in young Nigerian adults irrespective of sex. **Conclusion:** There is a positive correlation between arm span and standing height among young adults in Jos.

Key words: Arm span, correlation, standing height

SA_033 Prevalence of traumatic dental injuries among the Urhobos

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Traumatic dental injuries (TDI) are among the most neglected health problems of the 21st century and its importance has attracted little attention. This present study is therefore an attempt to formulate a baseline data for the prevalence of traumatic dental injuries among Urhobo males and females. The scope of this study was to determine the prevalence of trauma to the primary dentition of 10-40 year old Urhobos in Nigeria. A cross-sectional analysis was conducted using a representative sample of 384 people (M = 188, F = 196). Data was gathered by means of self-administered questionnaires. The prevalence of traumatic dental injuries (TDI) was 30.7% (n = 118). The most commonly affected teeth were maxillary

central incisors (37.3%). Enamel fracture was also found to be the most common fracture type (41%). Majority of the population with traumatic dental injuries could not remember the cause of the injury. This present study revealed a relatively low prevalence of traumatic dental injuries, but this figure still represents a large number of the population. Therefore, educational programs are to be initiated for the community regarding causes, prevention and treatments of traumatic dental injuries.

Key words: Dental injuries, Nigeria, trauma, urhobos

SA_035 Forensic ballistics and its applications in diagnostic medicine

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Forensic ballistics is the application of analysis of bullets and bullet impact to determine information of use to a cause. It is highly imperative in crimes involving gun fights, assassinations from guns and missile firing. This article is aimed at reviewing related literatures in the application of forensic ballistics in diagnostic medicine. A detailed and accurate investigation requires an adequate knowledge on rifling characteristics, gun type and their specific bullets characteristics and different categories of gun-shot wounds. Ballistics investigation also entails cytological and histological diagnosis in cases where bullet projects through a body cavity. Its principles are also applied in DNA typing where a bullet found at a scene may be linked to polymerase chain reaction. One major application of ballistics is ballistics finger printing which involve analyzing firearm ammunition and tool mark or tool in other to establish a certain fire arms or tool that was used in commission of a crime.

Key words: Finger printing, forensic ballistics, polymerase chain reaction

SA_037 Estimation of neuronal number in the olfactory bulbs of African Giant rats (*Cricetomys gambianus*, Waterhouse - 1840)

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The African Giant rat (AGR) (*Cricetomys gambianus*, Waterhouse-1840), also known as the Gambian pouched rat is a wild rodent that belongs to the order *Rodentia*, and is quite common in Nigeria. An increasing amount of interest is presently being expressed on the biology of the AGR).

The olfactory bulb is a structure of the vertebrate forebrain involved in olfaction, the perception of odours. Ten (10) adult AGR (*Cricetomys gambianus*, Waterhouse-1840), consisting of five (5) male and five (5) females were used for this study. The animals were captured alive around Zaria-Nigeria using locally made rat traps, without any injury on them. The animals were anaesthetized with chloroform and transcardially perfused with a phosphate buffered solution of (pH 7.2, M = 0.12) 4% formaldehyde and 1% glutaraldehyde. The brain was removed and the olfactory bulb was separated placed in the same fixative. Designed-based stereological were used to count neuronal numbers in the olfactory bulb. Data were expressed as mean±SEM and statistical analyzed. AGR had an estimated neuronal number of $35.6 \times 10^5 \pm 23.1 \times 10^5$ in the olfactory bulbs of adult AGR. The results obtained from this study may be used in comparative neuroanatomy of rodents of similar species.

Key words: African Giant rats, neurones, olfactory bulb, stereology

SA_038 Morphometric study of the teratogenic effect of artesunate on the developing olfactory bulb of Wistar rats following maternal oral administration

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Artesunate an antimalarial drug has been reported to cause irreversible brain damage in experimental rats, and to cause other toxic effect like haemolysis and neutropenia. This study was conducted to investigate the teratogenic effect of the antimalarial agent artesunate (ARTS) on the developing olfactory bulb of Wistar rats following maternal oral administration. A total of 16 virgin female and 8 male Wistar rats weighing 150 g was used for this study, estrous cycle of the female rats were determined and at the proestrous phase they were allowed to mate with the male overnight. Pregnant rats were administered ARTS daily from gestational day 8~12 via oral gavage, at test doses of 0, 2, 4, or 8 mg/kg (4 females per group). The pups were examined for morphometric changes and changes in olfactory bulb morphometry after littering by the Dams. With regard to the pups there was significant reduction in the crown-rump length, hind-limb length, fore-limb length and organ-bodyweight ratio. There was significant decrease in the length, width, thickness, and weight of the olfactory bulb, which is dose dependent, with more effect on the 8 mg/kg group than in the 2 mg/kg group. The effect of artesunate was dose dependent, and has been shown to significantly decrease the crown-rump length, fore-limb length, hind-limb length, and organ body weight ratio of the pups, and it also significantly decrease the weight,

length, thickness and width of the olfactory bulb with the no-observable-adverse-effect level (NOAEL) to be 2 mg/kg/day for embryo-fetal development.

Key words: Artesunate, teratogen, teratology, Wistar rat pup

SA_039 Phytochemistry, cytological and histological evaluation of ethanolic seed extract of *Citrullus lanatus* (Watermelon) on bone marrow of Wistar rats

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Background: *Citrullus lanatus* has witnessed increase patronage and consumption amongst the populace as a nutritional supplement and medicinal herb. This study evaluated the phytochemistry, cytological and histological effects of ethanolic seed extracts of *Citrullus lanatus* on bone marrow. **Method:** Elemental components were determined using a UNICAMM 969 atomic absorption spectrophotometer (AAS) while functional groups were analyzed using furrier transform infrared ray (FTIR). Fifteen (15) Wistar rats of average weights 150g were divided into three groups A, B, and C of 5 rats each. Group A (control) received 0.1ml saline while groups B and C received 100 mg/kg and 200 mg/kg of ethanolic seed extract of *Citrullus lanatus* orally respectively for 14 days. Thereafter, the animals were anaesthetized using 50 mg/kg ketamine hydrochloride. Bone marrow was collected from the femur processed and stained using Haematoxylin and Eosin, part of the marrow was smeared and stained cytologically using May-Grünwald-Giemsa stain. **Results:** The AAS revealed concentrations of 754.20 mg/kg, 53.70 mg/kg, 45.10 mg/kg, 24.20 mg/kg 11.80 mg/kg and 1.10 mg/kg for iron, zinc, lead, copper, and nickel and cadmium ions respectively. The FTIR revealed presence methyl, aldehyde, acetyl, carboxyl, hydroxyl and ether groups. Bone marrow histology from groups B and C shows greater cellularity, cytology revealed more of myeloid precursors than erythroid precursors compared to the control. **Conclusion:** *Citrullus lanatus* seed extract has chemical properties which stimulate haematopoietic precursors in the bone marrow.

Key word: Bone marrow, *Citrullus lanatus*, cytology, haematopoietic, histology, phytochemistry

SA_041 Variations in the gluteal course of sciatic nerve in Nigerian cadavers: Implications for intramuscular injections

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Injury to the Sciatic nerve as a result of intragluteal injections is quite common but avoidable. This study aimed to provide a safe alternative to the traditional dorsogluteal and ventrogluteal injection sites. Eighty four (84) gluteal regions from forty two (42) cadavers were dissected following guidelines described in Finley's Interactive cadaveric dissection guide and the 15th Edition of Cunningham's manual of practical anatomy. The course of the Sciatic nerve in the gluteal region as well as the distance between relevant surrounding structures were examined. The Sciatic nerve was observed to have a normal course through the Ischio-trochanteric path in all the cadaveric specimens dissected. An anatomical space approximately 6cm, and free from major neurovascular structures was observed to exist between the medial margin of Sciatic nerve at exit point and the gluteal cleft at the midline. We suggest that this space, 5.77cm; 6.09cm long in male and female cadavers can be used as a safe site for intragluteal injections especially when the usual injection sites for some reasons are not available. This study will also be helpful in the management of certain categories of surgical patients and other individuals with special needs.

Key words: Cadavers, dorsogluteal, intragluteal, sciatic nerve, ventrogluteal

SA_044 A study on craniofacial dimensions of Nigerian Kalabari children and adolescents

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The study aimed at determining the craniofacial dimensions of Kalabari people. This is very important for the study of human growth and variation in different races and for clinical diagnosis and treatment. This study was carried out using 500 subjects, 250 males and 250 females age ranging from 3-18 years. All subjects were randomly selected from Kalabari ethnic group in Rivers State. A measuring tape was used to measure head circumference, a meter rule was used for measuring inner and outer canthal distance, and a sliding caliper was used for measuring mandibular and maxillary height, facial and oro-facial height. Canthal and circumference interorbital indices were calculated based on standard formulae. The result showed that the male and female had mean of head circumference as 52.62 cm and 52.25 cm, inner canthal distance 3.45 cm and 3.35 cm, outer canthal distance 9.99 cm and 9.23 cm, mandibular height 2.98 cm and 2.89 cm, maxillary height 1.57 cm and 1.56 cm, facial height 9.49 cm and 9.45 cm, oro-facial height 4.52 cm and 4.45 cm, canthal index 36.96 and 36.18, and

circumference interorbital index 6.54 and 6.40 respectively. The z- test analysis indicates that the Kalabari males were not significantly different from their female counterparts in all the parameters ($P > 0.05$) except the inner canthal distance and the circumference interorbital index, the male were significantly different from the females ($p < 0.05$). The result indicates sexual dimorphism among the Kalabaris. This value could be very useful as anthropometry reference value for craniofacial surgeons in reconstruction surgery among Kalabaris in Nigeria.

Key words: Anthropology, anthropometry, craniofacial, Kalabari, Nigeria

SA_047 The role of forensic entomologist in diagnostic medicine

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The relevance of insects in human anatomy has not only been limited to bone maceration but also imperative in an aspect of forensic science called forensic entomology. It deals with application and analysis of insects and some biological arthropods in crime investigation. This emergent field is highly significant in determination of post mortem interval, child abuse and rape, neglect of injured elderly and in toxicology. Forensically important insects used in this study include necrophagians (flies), beetles and their predators. For an adequate inference on post mortem interval and in determination of time, place, manner and cause death, forensic entomologists are required to have a detailed understanding of lifecycle of insects, rate and factors affecting insect development and corpse decomposition. Forensic entomologist is applied in fields such as genetics, toxicology, maggot therapy and advanced histology. Despite its numerous applications in forensic science its accessibility becomes a limitation in developing countries. Therefore more accessible advances and techniques should be employed especially in developing countries such as Nigeria to enable an accurate estimation of Post Mortem Interval.

Key words: Arthropods, entomology, maceration

SA_051 Assessing students knowledge of sub-discipline in anatomy

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In recent times the knowledge of anatomy has been broadened to a wide range of sub disciplines such as forensic science, sports medicine and medical genetics etc. Despite these recent trends, anatomy undergraduates are faced with challenges of areas of specialization and limited or no job placement for a degree in anatomy. This study is therefore aimed at assessing students' knowledge of sub discipline in anatomy. The study

involved 300 pretested self administered questionnaires which were administered to Delta State University Abraka and University of Benin Human anatomy undergraduate students. Results obtained were presented in percentages with tables and figures. Result showed sports science and bio - anthropology constituted 3.74% and 5.20% respectively. It further demonstrated evolutionary biology and comparative anatomy, biometrics and forensic biology and clinical genetics accounting for 8.80%, 9.00% and 9.81% respectively. Whereas disciplines like neuroscience constituted 11.38%, mortuary science 11.73%, cell and molecular biology 12.49%, clinical embryology 13.71%, histochemistry and histology accounted for 14.06%. Findings from this study also showed no differences between males and females as to which is more interested in Anatomy. Furthermore, result from mode of admission showed that a higher percentage of students were admitted by chance (56.6%) than by choice (43.4%). The present revealed that most students do not have knowledge in most career prospects in anatomy and therefore a redesign and review of undergraduates and postgraduate curricula in human anatomy should be encouraged.

Key words: Biometrics, clinical embryology, curricula

SA_058 Echocardiographic assessment of the left ventricular parameters and its relationship with body mass index in Nigerians

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The objective of this study was to derive reference values for some parameters of the left ventricle and its relationship to the body mass index in Nigerians, using two-dimensional (2D) guided Motion-mode echocardiography. 81 healthy individuals were randomly selected. As regards cardiovascular diseases, history and physical examination was used. Interventricular septal thickness in systole (IVSs) and diastole (IVSd), left ventricular internal diameter in systole (LVIDs) and diastole (LVIDd), left ventricular posterior wall thickness in systole (LVPWs) and diastole (LVPWd) were measured. Left ventricular mass (LV mass) and relative wall thickness (RWT) were calculated. Demographic characteristics were obtained. Parametric tests were conducted. Tests were two tailed with $P < 0.05$ indicating statistical significance. Normal reference range for left ventricular parameters were established; IVSd: 0.91-1.03 for males; 0.79-0.91 for females, IVSs: 1.42-1.58 for males; 1.29-1.39 for females, LVIDd: 4.33-4.61 for males; 3.97-4.27 for females, LVIDs: 2.89-3.11 for males; 2.50-2.78 for females, LVPWs: 1.29-2.17 for males; 1.33-1.47, LVPWd: 0.92-1.02 for males; 0.78-0.88 for females, RWT: 0.41-0.47

for males; 0.38-0.44 for females, and LV mass: 139.45-160.49 for males; 94.96-112.30 for females. Measured parameters are gender dimorphic. A simple linear regression of LVIDs on Body mass index gives $BMI = 0.0327(LVIDs) + 2.1308$ in healthy subjects.

Key words: Anthropometry, echocardiography, left ventricular parameters

SA_070 Lumbar lordotic angles in relation to age among adults of Delta State: A retrospective study

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Background: The shape of the individual bones that make up the spine makes it necessary for the spine to have a natural curve so it can focus properly. One of such curves is the lumbar lordosis which every human possesses in his or her lower spine. This normal inward curvature of the lumbar region of the spine has been said to be influenced by various parameters including age and gender and presents great variability in individuals. **Study Design:** A retrospective study in which one hundred and two lateral lumbosacral spine radiographs were observed and the lumbar lordotic angles of these radiographs were measured. **Objective:** To determine the normal lumbar lordotic angle among adults Deltans and to correlate it with the age of individuals. **Methods:** One hundred and two lateral lumbosacral radiographs were measured using the Cobb method and Data was analysed using SPSS version 20. **Results:** the range of values for the lordotic angles in the population was between 38° and 65°. Males showed a higher mean value (59.09°) than females (49.29°). Pearson correlation between age and Lordotic angle showed a negative, statistically non-significant coefficient. **Conclusion:** The negative correlation between age and lumbar lordotic angles indicate that an increase in age is associated with a decrease in the lordotic angle of an individual.

Key words: Lumbar lordotic angle, lumbosacral, radiograph

SA_071 Prediction of the height of the Esan ethnic group of Nigeria, using armspan length

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This study was carried out to determine the average value for the stature, arm span and arm span stature ratio of the Esan ethnic group. It was also carried out to determine the correlation between the stature and arm span, and to establish

a formulae for estimation of height using the arm span of the adult Esan ethnic group, as well as to determine if there are sexual dimorphism in these parameters. Six hundred subjects (600 Esan's) 300 males, 300 females (between the ages 18-50 years), were used for this study. The location where this study was carried out were: College of Education Igueben, Ambrose Alli University Ekpoma, Auchi Polytechnic Auchi, Ekekhen Community, Uromi Community and New Benin City. The morphological measurements were stature (height) and arm span length. The mean and standard deviation of height of the males and females were 176.19 ± 7.09 cm and 167.36 ± 6.92 cm. It was observed that the Esan males had a significantly higher height than the Esan females ($p < 0.05$). The mean and standard deviation of arm span length of the males and females were 187.30 ± 8.41 cm and 173.75 ± 8.47 cm. It was observed that the males of the Esan ethnic group had a significantly larger arm span length than their females ($p < 0.05$). The mean and standard deviation of Arm Span Stature Ratio for males was 106.31 ± 2.18 cm and; while, for females, it was 103.81 ± 2.42 cm, it was also observed that, the males had a significantly higher values than that of the females ($p < 0.05$). A regression formula for estimation of stature was established from arm span length of the subjects. When comparing the result in this study and works of previous authors, there were ethnic and racial differences in these parameters. These values will be of clinical and forensic anthropological significance when dealing with the Esan people.

Key words: Arm span, clinical, Esan, stature

SA_073 The histomorphological and physical effect of nandrolone decanoate on the hepatorenal system of adult Wistar rat

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Nandrolone Decanoate which is a type of Anabolic Androgenic Steroid is used by athletes and non-athletes to increase their performance, body weight and also to cure ailment. Therefore, this study is aimed at investigating the intraperitoneal effect of Nandrolone Decanoate on the liver and kidney with an administration which lasted for 28-days on ten (10) adult wistar rats male and female respectively. The models were divided into three groups. Group A (Control) received distilled water and rat feed Group B (Sedentary) received Nandrolone decanoate and were not subjected to physical exercise while Group C (Exercise) nandrolone Decanoate was administered to them and were subjected to physical exercise of swimming in water till they experience drowning. The rats were sacrificed at the end of the 28 day. The liver and kidney were removed, and processed for histopathological analysis. The results from the study show hepatic tissue with periportal infiltration of the polymorphonuclear cells for sedentary models and congestion

of vascular channels, fat deposit and binucleated hepatocyte for the exercise models. While the renal tissue of the sedentary models revealed glomerulosclerosis and glomerular edema with tubular degeneration and the renal tissue from the exercised models revealed that the renal corpuscle and renal tubule are essentially normal.

Key words: Binucleated hepatocyte, nandrolone decanoate, periportal infiltration

SA_078 Stature estimation from hand anthropometry among the Bini ethnic group of Nigeria

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With the increasing rate of crime and mass disaster, the need to estimate stature from dismembered body parts has become very relevant and this is an area of interest to anatomists, anthropologists and forensic scientists. In different populations, researchers have made efforts to derive regression equations to estimate stature from various parts of the body. This research was carried out to correlate stature with anthropometric measurements from the hand (hand length, hand breadth, hand span and hand index) among the Bini Ethnic group of Nigeria. Measurements were taken from 300 subjects between 18 and 30 years. Values gotten from measurements were statistically analyzed and stature was correlated with the parameters. All the parameters showed significant correlation with stature, hand span gave the highest correlation coefficient (for males, $R=0.599$; for females, $R=0.585$) while hand index gave the lowest correlation coefficient ($R=-0.015$ for males and $R=-0.296$ for females). In conclusion, stature can be reliably estimated from any of the parameters used in this study as there were no statistically significant differences between the real height and those estimated from the regression equations derived in both males and females.

Key words: Bini ethnic group, hand anthropometry, Nigeria, stature estimation

SA_079 Stature estimation from selected anthropometric measurements of the upper extremity among the Bini ethnic group of Nigeria

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The high rate of terrorism in the country has led to increasing demand for individual identification especially from dismembered body parts. The aim of this study was to establish regression equations for estimation of stature from selected percutaneous measurements of the upper extremity (humeral length, ulnar length and full arm span) among the Bini ethnic group of Nigeria. Measurements were taken from 300 subjects within the age bracket of 18 and 30. Values gotten from measurements were statistically analyzed and stature was correlated with the parameters. All the parameters showed significant correlation with stature, full arm span gave the highest correlation coefficient (for males, $R = 0.866$; for females, $R = 0.904$). In conclusion, stature can be reliably estimated from any of the parameters used in this study as there were no statistically significant differences between the real height and those estimated from the regression equations derived in both males and females.

Key words: Anthropometry, full arm span, humeral length, stature estimation, ulnar length

SA_084 Effects of *Jatropha tanjorensis* leaf extract on the bone marrow and hematocrit of male adult Wistar rats

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The leaves of *Jatropha tanjorensis* are consumed locally to boost packed cell volume (Haematocrit) warranting its being called "hospital too far" by local folks. However, both local speculations and various literature reports available have implicated *Jatropha* species as possessing deleterious effects on vital organs in the body namely liver, spleen, stomach, etc. It is ironical therefore to conclude that an agent which is harmful to virtually all the vital organs in the body will genuinely improve hematocrit. The aim of this research is to determine the effects of the consumption of *Jatropha tanjorensis* leaf extract on the bone marrow histology and the hematocrit of adult Wistar rats. In this experiment, adult male and female Wistar rats (total number = 16) weighing averagely 180 g were randomly assigned into four groups of four rats each – the control group and 3 treated groups. The treated group I, II and III were given 50 mg/kg/day, 750 mg/kg/day and 1000 mg/kg/day respectively of the extract through the oral route. The control group rats were fed with the same quantity of grower mash feed as the treated group but without the extract. The hematocrit of all the rats was determined on experimental day 1, day 5, day 10 and day 15. Both control and treated groups were sacrificed on day 15. A cross section of the bone marrow from the femur of each rat was taken, fixed and processed for histological studies. The histological examinations of the bone marrow of the control group rats revealed normal bone marrow morphology in terms of cellularity. The bone marrow of the treated group I, showed bone marrow with increased cellularity and marrow expansion. These changes were more so

in treated group 2, where there was in addition, a low bone fat and prominent epiphyseal cartilage. However, in treated group 3, there was obvious sign of bone marrow degeneration and reduced cellularity. The haematocrit pattern increased across all the groups; the control group has the highest increase and the treated groups had their increase in inverse proportion to the dose administered. These findings clearly indicate that this extract produces toxic effects on the bone marrow. The haematocrit change in lowest dose does not produce normal physiological increase in haematocrit. The relative increase so noticed may have occurred as a result of adaptive or reactive hyperplasia of the bone marrow to toxic effects of the extract. Degenerative changes were observed at high dose in treated group III, indicating toxicity.

Key words: Adult, bone marrow, *Jatropha tanjorensis* haematocrit, Wistar rats

SA_091 A comparative study of the wound healing property of cooked and uncooked *Lycopersicon esculentum* fruit using male albino Wistar rats

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Wound healing is a complex process involving the replacement of new tissues to injured tissues by the body. *Lycopersicon esculentum* fruit has been recommended by trado-medical practitioners to aid the wound healing process while scientific investigation has attributed such potency to the high level red pigment and a powerful anti-oxidant – lycopene. Most studies have confirmed lycopene to be higher in the processed as well as the cooked fruit than in the unprocessed and uncooked fruit. Based on this, a comparative study of the wound healing property of the cooked and uncooked *Lycopersicon esculentum* fruit using male Wistar rats was conducted. Firstly, a comparative phytochemical screening and quantitative analysis was conducted on both the cooked and uncooked fruits. Forty-eight male Wistar rats with a weight range of 170–190 g were used for the study and thereafter divided into four groups of twelve animals tagged: cooked, uncooked, gentamicin and control groups. A 2 cm by 2 cm wound was inflicted dorso-laterally on the thoracic region of the rats in the respective groups and treated with their respective test agents. The wound sizes were measured while at day 4 and 8, the granulation tissues of 4 animals per group was excised. The remaining animals were left until complete skin re-epithelisation was achieved with the days of wound closure noted. The result revealed the cooked *Lycopersicon esculentum* fruit not to be a better alternative wound healing agent to the uncooked *Lycopersicon esculentum* fruit.

Key words: *Lycopersicon esculentum*, phytochemical screening, wound healing

SA_092 A pilot study on breast cancer awareness and its relationship to abo blood group in Nigeria

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Breast cancer is a major global health problem and a leading cause of death among women of all ethnic and racial background. Based on this, a pilot study was conducted with the aim of accessing the level of its awareness in the Nigerian adult females and its relationship to ABO blood group and genotype. Two hundred and thirty nine adult (239) females within the age range of 20-80 years were used for the study. Of the 239 females, 100 of them (both married and single) were issued questionnaires so as to ascertain their awareness of breast cancer in the society. The remaining 139 females were adults diagnosed of breast cancer as revealed by their accessed files from the Department of female Surgical Ward of the University of Port Harcourt Teaching Hospital, Rivers State- Nigeria. From the result, of the 100 subjects issued questionnaires, 85% agreed of been aware of breast cancer. All the patients with breast cancer fell within the blood group A, B and O of which all were rhesus positive. Age 26 years and 39 years were the least and highest years with breast cancer respectively. The age range of 30-39 years recorded the highest figure of 39 patients while the least was 70-79 years with only 4 of the patients diagnosed of breast cancer. No patient with blood group AB was observed to have been linked to breast cancer from this study. However, blood group A⁺, B⁺ and O⁺ revealed breast cancer patients to be 69, 22, and 48 respectively with blood group A⁺ being the highest.

Key words: ABO Blood group, awareness of breast cancer, Nigeria

SA_093 Acute cytologic effects of exposure to generator fumes on adult Wister rats

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Introduction: Generator fumes or smoke is a blue, black or sometimes white smoke that is emitted from generator exhaust. This fume contains various gases which include carbon soot, carbon monoxide, polycyclic aromatic hydrocarbon; water vapor etc. carbon monoxide and polycyclic aromatic hydrocarbon compounds are known poisonous gases that according to previous work affect various tissues in the body.

In Nigeria electrical is widely used as a result of inadequate power supply which causes air pollution, this study therefore is aimed at investigating the acute cytological effects of these fumes. **Materials and Methods:** The experimental study was carried out on Adult Wister rats of both sex and they will be grouped into two group A, the experimental group was exposed to generator fumes at CO level of >50 PPM but <100 PPM for 14, days and group B were kept in a relatively normal environment away from generator smoke. The effects of the exposure to generator fumes were assessed using blood film cytology. **Results:** The result showed erythrocytes composed predominantly of cells with prominent central parlor though with normal sizes and these cells are intermixed with moderately abundant white blood cells composed of lymphocytes predominantly granulocytes, plasma cells and a few monocytes. **Conclusion:** The above features are in keeping with monocytic hypochronic anemia with relative leukocytosis

Key words: Aromatic hydrocarbons, erythrocytes, generator fumes

SA_098 Epileptic seizure: Its pathology and management

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Epilepsy, being a nervous disorder, is the occurrence of two or more seizures. It is caused by paroxysmal discharges from a lesion, called the focus, in the brain which is usually idiopathic. Several predisposing factors may also cause is such as brain chemistry, hereditary factors, genetic mutation head injuries and prenatal injuries, amongst others. It is not contagious and can be treated in 70% of cases. Depending on the type of behavior, epileptic seizures can broadly be classified into two major categories which are generalized and partial seizures. Diagnosis is done by the aid of an electroencephalogram, after ruling out other conditions that might cause similar symptoms such as fainting, though a normal test does not rule out the condition. During general fits, first aid measures involve not restraining the person and not putting things in the person's mouth.

Key words: Epilepsy, electroencephalogram, seizures

SA_103 Segmental anatomical localization of liver abscesses of various aetiologies in ultrasound examination

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Introduction: Liver abscesses - severe pathology with high mortality rate (10-15%), as observed in 0.02-2% of hospitalized patients, the frequency of this pathology in the general surgical

hospital reaches 0.5 %. Liver abscesses in ultrasound imaging, especially in the formative stages, are often difficult to diagnose and depends on the topographic anatomical localization, which can lead to errors in diagnosis and delayed treatment. Thus, identification of areas projected for precise localization of liver abscesses in ultrasound examination is an important task, which forms the basis of this research work. **Aims:** Assess and find reason of frequency of localization of liver abscesses in segments of the liver. **Materials and Methods:** Analysis of complex dynamic survey of 248 patients with liver abscesses (144 females, males 104) aged 4-81 years (mean age 59 years) was carried out. Ultrasound examination was performed according to standard protocol with US scanners: Acoustic Imaging AI-5200, Philips HDI 5000, GE Logic 3 and Toshiba Aplio 500 with 3.5-5.0 MHz convex probes. The presence of disease and potential causes of liver abscesses were recorded. **Results and Discussion:** In the study 159 (64.1%) were pylephlebitic liver abscesses, 36 (14.5%) - posttraumatic, 31 (12.5%) – cholangiogenic and 3 (1.2%) - contact. In 19 (7.7%) the cause of liver abscess was not established. Among pylephlebitic liver abscesses, 139 (87.4%) of the aetiological subgroup

were inflammatory diseases of the intestinal tract (bacterial overgrowth syndrome, Crohn's disease, ulcerative colitis etc), which in our opinion, are potential sources of infection and the development of liver abscess. Pylephlebitic liver abscesses, as shown in our data, significantly are more prevalent in liver segments VII - 72 (45.3%), VIII - 41 (25.8%) and V - 28 (17.8%) of cases. This fact is probably due to the anatomical architecture of portal vein, in particular, the most direct path to the segmental branches of segment VII. No statistically significant differences of liver abscesses in the frequency of localization in liver segments of other etiologies were established. **Conclusion:** The conducted studies showed that pylephlebitic liver abscesses significantly dominated 159 (64.1%). In majority of patients with cryptogenic liver abscesses, history revealed chronic diseases of the intestinal tract as potential sources of infection. Presence of chronic hyperthermia syndrome and manifestations of acute inflammation of unknown etiology, especially in combination with chronic bowel diseases, is the basis for precise ultrasound examination of V, VII and VIII liver segments using the optimization imaging methods to detect the possible presence of liver abscess.