Original Article

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Pathology Section

Histomorphometrical Study of Placental Villi in Preeclampsia: A Case-control Study

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ABSTRACT

Introduction: Preeclampsia is a leading cause of maternal and perinatal morbidity and mortality. In this disorder, placental morphology and cellular arrangement are altered so that oxygen delivery from mother to foetus is greatly disturbed, which ultimately results in cellular oxidative stress. Morphological and histological changes are both indicative of the pathogenesis of maternal and foetal morbidity and mortality in women with preeclampsia.

Aim: To study the gross and histomorphometric features of placenta in patients with preeclampsia.

Materials and Methods: This case-control study was conducted from January 2017 to December 2017 at Jawaharlal Nehru Medical College Hospital in Belagavi, Karnataka, India. Total 120 placentas of preeclampsia patients (60) and normal controls (60) were studied, which were received at Pathology Department of the institute. Immediately after delivery, gross parameters were recorded. For histomorphometrical study, full-depth tissue samples of placenta were fixed in 10% neutral buffered formalin solution for 24-48 hours, and then they were processed by graded concentrations of alcohol and embedded in paraffin to make blocks. The 5 µm thick sections were cut and slides were stained with Haematoxylin and Eosin (H&E) and the sections were studied. Values were calculated by mean±SD using Students unpaired t-test and Chi-square test, p-value of <0.05 was considered as significant.

Results: The mean maternal age of the study participants was 23.93±4.40 years in preeclampsia group and 23.85±3.44 years in control group. The gestational age was 36.42±2.69 weeks in preeclampsia group and 38.20±2.11 weeks in control group, the difference was statistically significant. Other parameters such as neonatal weight, placental weight, placental thickness and placental diameter had statistically significant difference between both the groups. Morphological findings of placental terminal villi showed that the mean surface area was larger (2500.05±245 µm^2) in preeclampsia group compared to control group (1878.01±214.53 µm^2) and this difference was statistically significant.

Conclusion: The gross reduction of the preeclampsia placenta like decreased placental weight and diameter disturbs the normal placentation and pathologically these results in histological and morphometric changes in the placenta. Due to oxidative stress in preeclampsia placental morphology is altered.

Keywords: Gross, Histological, Oxidative stress, Placenta

INTRODUCTION

The placenta is an organ that plays a central role in pregnancy, but so far, it is poorly understood [1]. It has been described as a "diary of intrauterine life": it can elucidate many aspects of the processes during pregnancy [2]. Examination of placenta is important for both mother and infant as it can yield information which is important for management of disorders of both [3]. Two such disorders which can occur are preeclampsia and eclampsia- affecting the mother. The placenta, on the other hand, remains an underappreciated and mishandled surgical material [4]. Preeclampsia is a common complication of pregnancy, with a reported prevalence of 2-8 percent. Preeclampsia/eclampsia causes more than 50,000 maternal fatalities each year around the world [5]. Preeclampsia, which is lethal to both mother and foetus, has long been referred to as the "disease of hypotheses," but recent research has changed that perception. All indications and symptoms of this condition disappear when the placenta is delivered, according to previous observations. As a result, the placenta is the focus of the disease's genesis [6]. Preeclampsia and eclampsia are multisystem hypertension disorders that affect pregnant women. The neurological system is usually impacted in these women, and it is a substantial source of morbidity and death. Preeclampsia and eclampsia are not independent conditions in and of themselves, but are distinguished by their clinical signs [7].

Preeclampsia and eclampsia are the most prevalent and dangerous complications of pregnancy. They are most common in the middle to late stages of pregnancy. Pregnancy induced hypertension, proteinuria, and oedema are the three clinical symptoms used to make the diagnosis. Eclampsia is a serious degeneration of the organs that is accompanied by development of a convulsive state [8]. "Gestational blood pressure increases with proteinuria that develops after 20 weeks of pregnancy" is what preeclampsia is classified as. Preeclampsia is diagnosed by a systolic blood pressure of 140 mmHg or a diastolic blood pressure of 90 mmHg, as well as proteinuria of 0.3 g or more in a 24-hour urine sample.

Eclampsia is a disorder that occurs when a woman is pregnant and has convulsions [9,10]. Preeclampsia is characterised by generalised tonic-clonic seizures that occur during the third trimester, during birth, or during the puerperium in women who already have hypertension, proteinuria, and oedema. It is a leading cause of maternal and perinatal mortality and morbidity. Morphological and histological changes are both indicative of the pathogenesis of maternal and foetal morbidity and mortality in women with preeclampsia. Hence, this study would like to explore the gross and histomorphometric features of placenta for an early diagnosis of preeclampsia [11].

This study was done to study the gross and histomorphometrical features of placenta in preeclampsia for early identification of the condition and to understand the pathogenesis.

MATERIALS AND METHODS

This case-control study was conducted from January 2017 to December 2017 at Jawaharlal Nehru Medical College Hospital in Belgavi, Karnataka, India. Total 120 placentas of preeclampsia patients (n=60) and normal controls (n=60) recieved in the Pathology Department were studied. The study protocol was approved by the Institutional Ethical Committee (MDC/DOME/37 dated 17.10.2016).

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Original Article

Pathology Section

Application of International Academy of Cytology Yokohama System for Reporting Breast Fine Needle Aspiration Cytology- A Retrospective Study

KARTHIK SIGAMANI[1], NAYANA CHANDRAN[2]

ABSTRACT

Introduction: Fine Needle Aspiration Cytology (FNAC) is a rapid, minimally invasive and cost-effective procedure with a high sensitivity rate of 92-95% and high Positive Predictive Value (PPV) approaching 100% for the diagnosis of breast malignancies. International Academy of Cytology (IAC) Yokohama system for reporting breast FNACs had been established in 2016 to bring consistency and uniformity of breast cytology reporting.

Aim: To classify the breast lesions according to the IAC Yokohama system for cytological reporting of breast lesions.

Materials and Methods: This was a retrospective six years study carried out in the Department of Pathology, Karpaga Vinayaga Institute of Medical Sciences, Chinnakolambakkam, Tamil Nadu, India. All females breast FNAC cases reported during the year January 2015 to December 2020 were included in the study according to the inclusion criteria. Relevant clinical and pathological data including the FNAC reports were retrieved from the medical records of the department. Corresponding FNAC smears stained with Haematoxylin and Eosin (H&E) and Papanicolaou stains were reviewed and double-checked with the FNAC reports. All those cases were grouped according to the IAC Yokohama System. Statistical analysis was carried out using Statistical Package for the Social Sciences (SPSS) version 23.0.

Results: Of the total 381 female breast FNACs, majority (60%) of them belonged to the age group of 21-40 years. The predominant presenting symptom was palpable breast lump (73%) and Upper Outer Quadrant (UOQ) was involved in 65% of cases. Out of 381 cases, 297 (78%) were benign, 52 (13.6%) were malignant and 32 (8.4%) were inadequate for diagnosis. Total 73.8% cases belonged to "C2" category and fibroadenoma was the most prevalent lesion. Pearson Chi-square test showed highly significant association between patient's age above 40 years and the risk of having a malignant breast lesion ($p<0.0001$).

Conclusion: FNAC is an effective diagnostic modality for preoperative diagnosis of breast lesions thereby facilitating proper treatment at an early stage of the disease. Also adherence to the standardised cytological reporting system like IAC Yokohama system will ensure quality assurance across various institutions, thereby strengthening the healthcare services.

Keywords: Breast lump, Classification, Females, Quality assurance, Risk of malignancy

INTRODUCTION

Breast carcinoma is one of the common malignancies among females accounting for increased morbidity and mortality worldwide [1]. The common clinical symptoms of female breast lesions include palpable breast lump, breast pain and nipple discharge. Triple assessment of breast lesions that includes clinical, radiological and pathological evaluation (FNAC/Core needle biopsy) is a time honoured valuable approach for the management of breast lesions that can obviate the need for invasive procedures like excisional biopsy in most cases [1]. FNAC is a rapid, minimally invasive and cost-effective procedure with a high sensitivity rate of 92-95% and high PPV approaching 100% for the diagnosis of breast malignancies [2]. The need for intraoperative procedures like frozen section for detecting breast malignancy has been reduced to around 80% with the help of the more reliable FNAC [2].

Over the years several studies are being carried out worldwide for establishing a standardised reporting system for breast cytology that will aid the clinicians in the proper workup and efficient management of breast lesions. Recently in 2016, IAC Yokohama system for reporting breast FNACs had been established to bring about consistency and uniformity of breast cytology reporting across the globe, thereby ensuring proper clinical treatment [1]. This system had been developed by several experts that included cytopathologists, radiologists, oncologists and surgeons from across the globe after extensive research and review of literature. According to this system, all breast lesions are grouped into one of the five categories based on cytological examination namely: C1 (Inadequate), C2 (Benign), C3 (Atypical), C4 (Suspicious for malignancy) and C5 (Malignant). C1 category includes sparsely cellular or poorly fixed smears precluding cytomorphological diagnosis. C2 category includes smears with unequivocally benign cytological features. C3 category includes cytological smears with additional features that are not common in predominantly benign processes. C4 category includes smears with cytomorphological features of malignant lesions but with insufficient cellularity or quality to make a definitive diagnosis of malignancy. C5 category includes smears with unequivocal malignant cytomorphological features.

The Risk of Malignancy (ROM) and the suggested management options for each of the five categories have also been incorporated in this system that provide better information to the clinicians and help them in effective management of the patients with breast lump. The ROM according to this system is 2.6-4.8% for C1; 1.4-2.3% for C2; 13-15.7% for C3; 84.6-97.1% for C4 and 99.0-100% for C5 category of breast lesions [1]. The aim of this study was to classify the breast lesions according to the IAC Yokohama system for cytological reporting of breast lesions.

MATERIALS AND METHODS

This was a retrospective six years observational study carried out in the Department of Pathology Karpaga Vinayaga Institute of Medical

Case Series

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Pathology Section

Diagnostic Challenges of Uncommon Paediatric Head and Neck Masses- A Case Series

KARTHIK SIGAMANI[1], PREETHI SRINIVASAN[2]

ABSTRACT

Paediatric head and neck masses pose diagnostic challenge to the clinicians owing to the wide spectrum of lesions including congenital (developmental), inflammatory and neoplastic lesions. In the present case series, uncommon paediatric head and neck mass lesions that were diagnosed in a tertiary care hospital over a period of three years from January 2017 to December 2019, had been included, emphasising on the diagnostic challenges encountered. First case was of Cervical Chondrocutaneous Branchial Remnant (CCBR) that was misdiagnosed as branchial cyst clinically. Second case was a lymphoepithelial cyst that masqueraded as an acute suppurative lymphadenitis in Fine Needle Aspiration Cytology (FNAC) due to florid inflammation. Third case was an aggressive poorly differentiated malignant neoplasm of left nasal cavity namely Nuclear protein in Testis (NUT) carcinoma that had to be differentiated from several other small round blue cell tumours. Fourth was a case of lipoblastoma which could be mistaken for myxoid liposarcoma. The last two cases were vascular tumours, one of them was juvenile capillary hemangioma with a benign clinical course while the other was an intermediate grade tumour namely kaposiform hemangioendothelioma. A wholesome clinical, radiological and pathological evaluation will help to solve the diagnostic dilemmas in this group of lesions.

Keywords: Branchial cleft, Children, Congenital, Cyst, Tumour

INTRODUCTION

Paediatric head and neck masses are commonly encountered in clinical practice that pose serious diagnostic challenge to the clinicians owing to the wide spectrum of lesions that can occur in this region in children. Broadly paediatric head and neck lesions are classified into three categories namely congenital (developmental), inflammatory and neoplastic lesions based on aetiology [1]. Accurate diagnosis is possible only based on combination of proper clinical examination, radiological correlation and histopathological examination. The difficulty lies not only in diagnosis but also in handling parental anxiety and careful management of these lesions without any damage to vital structures in this region of the body of children. Any misdiagnosis can adversely affect the management and prognosis of this wide group of paediatric head and neck lesions. In the present case series, uncommon paediatric head and neck mass lesions that were diagnosed in a tertiary care hospital over a period of three years from January 2017 to December 2019 had been included, emphasising on the diagnostic challenges encountered and their unique features [Table/Fig-1].

CASE SERIES

Case 1

A two-year-old male child reported to the Department of General Surgery with a chief complaint of painless mass of size 2×2 cm in the right lateral side of neck since birth. There were no other significant complaints and there was no family history of similar swelling in the family members. On clinical examination, the swelling was non tender and soft in consistency. Ultrasonogram (USG) neck impression was branchial cyst following which the lesion was excised and sent for histopathological examination. Grossly, skin covered soft tissue mass measured 3×2.5×1.5 cm with a grey white cut surface. Microscopic examination revealed stratified squamous lining epithelium with a central solid core of mature cartilaginous tissue extending down to the muscles. The mature cartilage was surrounded by lobules of mature adipocytes and skin adnexal structures. Final diagnosis of Cervical Chondrocutaneous Branchial Remnant (CCBR) was made [Table/Fig-1,2]. The follow-up period was uneventful.

Variables	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Age	2 years	11 years	10 years	5 years	11 years	8 years
Gender	Male	Female	Female	Female	Female	Male
Location of the head and neck mass	Right lateral side of neck	Right lateral side of neck	Left nasal cavity	Left lateral side of neck	Right lateral side of neck	Right lateral side of neck
Size of the head and neck mass	2×2 cm	3×2 cm	1.5 cm diameter	2×1 cm	3×2 cm	4×2 cm
Associated clinical features	Painless and soft	Soft and painful	Nasal obstruction and painless	Painless, soft and mobile	Reddish, soft and painless	Reddish, soft and painless
Clinical diagnosis	Branchial cyst	Acute suppurative lymphadenitis	Nasal polyp	Cervical lymphadenopathy	Vascular malformation	Haemangioma
Radiological impression	Branchial cyst	Abscess	Nasal polyp	Lymphadenopathy	Haemangioma	Haemangioma
Final histopathological diagnosis	Cervical chondrocutaneous branchial remnant	Lymphoepithelial cyst (Branchial cyst)	NUT carcinoma	Lipoblastoma	Juvenile capillary Haemangioma	Kaposiform haemangioendothelioma
Immunohistochemistry	-	-	CK-AE1/AE3 + CD99 – Synaptophysin- Chromogranin-	-	CD31+ CD34+	CD31+ CD34+

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Research Paper

Assessment of Quality of life in Home versus Hospital Based Pulmonary Rehabilitation in COPD Patients: A Comparative Study

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Abstract

Background and Objectives: *Chronic obstructive pulmonary disease (COPD) is characterized by limitation in airflow which is an incompletely reversible and is a 3rd leading cause of death worldwide 2020. Pulmonary rehabilitation has been shown to be effective therapeutic strategy to improve quality of life, Health status and exercise intolerance. Evidence indicates that benefits of home rehabilitation are on par with hospital based in western studies, with limited data on Indian population. Hence the current study has undertaken to correlate home PR with hospital PR under by using St. George Respiratory Questionnaire and BODE index*

Materials and Methods: *Prospective, randomized controlled study with 112 subjects were randomized to two groups to receive hospital or home pulmonary rehabilitation and were followed up for 3months (every week in hospital group and once in every 2weeks in home group). Anthropometric variables assessed by body-mass index, airflow limitation was assessed by spirometry, degree of dyspnea was assessed by Modified Medical Research Council (mMRC) scale and exercise tolerance was assessed by six-minute walk test (6MWT). Statistical analysis done by SPSS software IBMS version 22.*

Results: *56 subjects were allocated in each group with mean age group 61.43±7.26 and64.04 ±8.56years in hospital and home group respectively and both study groups were matched in age, anthropometry, smoking status, and comorbidities. The mean baseline and post rehabilitation BODE index in Hospital group are 5.6±2and4.5±2 respectively with a mean difference of 1.5±1.3 which is statistically significant. The mean baseline and post rehabilitation BODE index in home-based PR group are 4.6±2 and 3.3±2 respectively, with a mean difference of 1.3±0.6 in home group which is statistically significant. The mean total score (SGRQ) at baseline was 45.87 ± 3.53 and 45.64 ± 2.97 in Hospital and Home group respectively. The mean total score at12th week was 35.89 ± 6.4 and 38.58 ± 8.74 in Hospital and Home group respectively. The difference in scores of SGRQ at baseline and post rehabilitation between home and hospital groups was statistically not significant (P value >0.05), thus shows similar improvement in both study groups. However, attrition rate is more in Home-based group compared to Hospital-based group.*

Conclusion: *The outcomes of PR are between Home and Hospital Groups are comparable. The attrition rate is more in home-based PR group with lack of family support being important cause to poor adherence to PR. All COPD patients should be encouraged to utilize the healthcare facilities to undergo pulmonary Rehabilitation for improving their quality of life.*

ORIGINAL ARTICLE PEER-REVIEWED

An Insight Into the Distribution of Allele Frequency of ABO and Rh (D) Blood Grouping System Among Blood Donors in a Tertiary Care Hospital in Chengalpattu District of South India

Karthik Sigamani, Shiva Prasad Gajulapalli

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Abstract

Introduction

The distribution of ABO and Rh (D) blood groups and their allele frequencies vary from one population to another worldwide. The objective of the study is to estimate the distribution of ABO & Rh (D) blood groups among all the blood donors in a tertiary care hospital in Chengalpattu district of Tamilnadu in South India and to determine their allele frequencies.

Methods

This was a retrospective observational study carried out in the blood bank of Karpaga Vinayaga Institute of Medical Sciences and Research Centre from January 2015 to December 2021. ABO and Rh (D) blood grouping of all the blood donors were carried out by tube agglutination method. Allele frequency of the blood group genes was calculated based on Hardy-Weinberg equilibrium.

Results

Out of total a of 7598 blood donors, 7576 (99.71%) were males and 22 (0.29%) were females. The most common blood group was O positive (37.67%) while AB negative (0.18%) was the least common blood group. The phenotypic frequency of blood group O (39.17%) was the highest and that of blood group AB (7.88%) was the least. A majority (95.96%) of the blood donors were Rh (D) positive. The allele frequencies of ABO and Rh (D) blood groups were 0.1628 for I^A, 0.2177 for I^B, 0.6259 for I^O, 0.7991 for I^D, and 0.2009 for I^d.

Conclusions

The distribution of the two major blood group systems namely ABO and Rh (D) systems show considerable heterogeneity in different populations of the world. Information about allele frequencies of blood groups among different populations worldwide will help in framing policy

ORIGINAL ARTICLE PEER-REVIEWED

Hematological Profile in COVID-19 Infection Among Patients in a Tertiary Care Hospital in Tamil Nadu, South India

Nayana Chandran, Karthik Sigamani, Altaff Khadeja Bi

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Abstract

Introduction

A wide range of hematological abnormalities has been observed in SARS-CoV-2 infection which is directly related to the disease progression, clinical severity, and mortality among affected individuals. The objective of this study was to evaluate the abnormalities in hematological parameters among severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infected patients in a tertiary care hospital in south India.

Methods

This was a cross-sectional study carried out in the pathology department of Karpaga Vinayaga Institute of Medical Sciences and Research Centre, Chengalpattu, Tamil Nadu, India from 1st May 2021 to 30th June 2021. The hematological reports including complete blood count (CBC), neutrophil-lymphocyte ratio (NLR), serum ferritin, serum C-reactive protein (CRP), serum lactate dehydrogenase (LDH), and D-dimer levels of all the blood samples from COVID-19 positive patients were retrieved from the laboratory records. The Leishman-stained peripheral smear findings were also tabulated and analyzed.

Results

Out of 65 patients, 38 (58.5 %) were males and 27 (41.5%) were females with a majority (78.4%) of them being more than 40 years of age. The salient hematological abnormalities were leukopenia (21.5%), elevated NLR (43%), and thrombocytopenia (6.2%). Peripheral smear showed schistocytes (15.4%), neutrophils with ring nuclei (84.6%), and toxic granules (81.5%). A statistically significant association between elevated NLR and serum CRP was seen among male patients. The association between the presence of schistocytes with serum LDH and D-dimer levels was statistically insignificant.

Conclusions

The significant hematological abnormalities in patients with COVID-19 infection were elevated NLR, lymphopenia, thrombocytopenia, and elevated D-dimer levels. Careful evaluation of the hematological parameters will help in categorizing the high-risk cases and thereby initiating

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RESEARCH ARTICLE

AN OBSERVATIONAL STUDY ON DIASTOLIC FUNCTION IN POST MYOCARDIAL INFARCTION PATIENTS IN A TERTIARY CARE CENTRE IN KANCHEEPURAM DISTRICT

Dr. Akshara Sivakumar and Prof. Dr. R. Kulothungan

Manuscript Info

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Abstract

Background: Diastolic dysfunction may be the earliest marker which leads to progressive cardiac failure. Thus the importance of detecting diastolic dysfunction using tissue doppler echocardiography helps in preventing the progression of patients to symptomatic congestive cardiac failure

Objectives:

1. To find the prevalence of diastolic dysfunction in post myocardial infarction patients
2. To study the association between left ventricular diastolic dysfunction and variables such as smoking, Diabetes, Hypertension, Killip class,Type of Myocardial Infarction

Methodology:

Study design: Cross sectional study

Study population : Post Myocardial infarction patients between 30 to 60 years of age

Study period :18 months

Sample size :144

Sampling technique : Convenient sampling

Results: Prevalence of left ventricular diastolic dysfunction is 56%.There is statistically significant association between risk factors like smoking ,hypertension ,diabetes and occurrence of left ventricular diastolic dysfunction($P<0.05$).There is no association between type of Myocardial infarction and left ventricular diastolic dysfunction .

Conclusion: Worsening diastolic function can be detected even in apparently healthy persons. Although confirmation in other studies would be helpful, our data suggest that persistence or progression of diastolic dysfunction is a risk factor for heart failure in post myocardial infarction patients.

Introduction:-

When the myocardium does not receive enough blood and oxygen, coronary artery disease develops. It is caused by a mismatch between oxygen demand and supply owing to coronary artery blockage. The most prevalent cause is plaque formation in the lumen of coronary arteries, which restricts blood flow. It is one among the leading causes of death worldwide.

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Original Article

Dry Eye Disease in Patients with Alcohol Use Disorder

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Abstract

Aim: To study the symptoms and signs of dry eye disease (DED) among individuals with alcohol use disorder (AUD). **Subjects and Methods:** This case-control study was conducted in the out patient Department of Ophthalmology in a medical college in South India over a period of twelve months, on a total of 172 eyes of 86 participants with 43 cases of alcohol use disorder (AUD) and 43 controls. The cases of AUD were 18 years or older and fulfilled the criteria of diagnosis of AUD as per the Diagnostic and Statistical Manual of Mental Disorders –5th edition (DSM-5). The controls were matched for age and sex with the cases. All cases and controls were subjected to the Ocular Surface Disease Index® (OSDI) questionnaire and Schirmer's test after assessment of their best-corrected visual acuity (BCVA). The cases were further assessed for tear breakup time (TBUT), fluorescein staining, and rose Bengal staining using slit lamp biomicroscopy followed by fundus examination. The Chi-square test, odds ratio, 95% confidence interval were calculated using the Statistical Packages for Social Sciences (SPSS) version 20 software. A P value of <0.05 was considered significant. **Results:** The mean age of cases was 45+/-11 years. Cases less than 40 years showed the highest proportion (44.2%) of DED with irritation being the most common symptom (24.4%). OSDI scores showed mild type of DED in 39.5% ($P < 0.0001$). Schirmer's indicated dry eyes in 38.3% ($P < 0.0001$) with OR of 12.1 in the right eye and 13.4 in the left eye. TBUT revealed marginal grade for dry eye in 44 eyes (51.2%) and definitive dry eye in 35 eyes (40.7%) In AUD, conjunctival and corneal staining with fluorescein were seen in 46 eyes (53.5%) with interpalpebral staining in 22 eyes (25.6%), inferior staining in 14 eyes (16.3%) and a combination of interpalpebral and inferior staining in 10 eyes (11.6%). **Conclusion:** Alcohol has a deleterious effect on the ocular surface and gives rise to DED. This implicates the necessity of regular ophthalmic screening including staining of the ocular surface to diagnose and treat DED in people with AUD especially in the age group between 18–40 years.

Keywords: Alcohol use disorder, dry eye disease, ocular surface disease

Introduction

Tear Film and Ocular Surface Society Dry Eye Work Shop defined dry eye disease (DED) as a multifactorial disease of the ocular surface characterized by a loss of homeostasis of the tear film and accompanied by ocular symptoms, in which tear film instability and hyperosmolarity, ocular surface inflammation and damage, and neurosensory abnormalities play etiological roles.[1] The prevalence of dry eye varies from 7% to 54% from country to country.[2-4] DED is common in elderly, women especially older women,[4,5] and can be associated with glaucoma.[6] Imbalance in epidermal growth factors, vitamin A, fibronectin, and neurotrophic actor growth factor may contribute to the pathogenesis of DED.[7] Causes of DED include alcohol consumption,[8] smoking,[9] sleep disturbances,[10] contact lens, and cosmetics.[11] DED, needless to say, impairs the quality of life.[12]

A meta-analysis on alcohol consumption and dry eye disease[8] revealed the many controversies in the association of alcohol and DED though the study itself concluded that alcohol consumption may be a significant risk factor for DED. Literature review revealed the paucity of studies that looked into DED in alcohol use disorder (AUD) in the Indian population. In a study by Sahai *et al.*[4] on a hospital based population in India, there has been no mention of alcohol as a risk factor for DED.

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Original Article

Clinicopathological Profile of Myxoid Soft Tissue Tumors- A Retrospective Study in a Tertiary Care Hospital in South India

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ABSTRACT

Background: Myxoid soft tissue tumors are rare and diagnostically challenging group of tumors with varied biological behavior ranging from benign, locally aggressive to distantly metastasizing malignant tumors. **Aims:** The objectives of the study are to identify the relative frequency and distribution of myxoid soft tissue tumors among patients in a tertiary care hospital and to study the clinicopathological features of these tumors. This was a retrospective cross-sectional study conducted in the department of pathology of a tertiary care hospital from January 2008 to December 2013. **Materials and Methods:** Clinical and pathological details of all the 80 myxoid soft tissue tumors reported during the study period were retrieved from the records of department of pathology. Corresponding Hematoxylin & Eosin (H & E) slides were reviewed, and Immunohistochemistry (IHC) was carried out for confirmation. The relationship among various prognostic variables was analyzed in case of myxoid sarcomas. **Results:** Myxoid soft tissue tumors accounted for 3.7% among the soft tissue tumors with a predominance of malignant myxoid sarcomas (71.25%) in contrast to the overall picture of sarcomas. Myxoid neurofibroma (34.78%) was the most common benign tumor, while myxofibrosarcoma (33.33%) was the frequent myxoid sarcoma. A statistically significant correlation was seen between tumor size and depth (*P*-value: 0.038) and also between presence of vascular invasion and histological grade (*P*-value: 0.012) of sarcomas. **Conclusion:** Light microscopic morphology, supplemented by ancillary techniques like IHC, remains the cornerstone for diagnosis of myxoid soft tissue tumors.

KEYWORDS: *Clinical features, glycosaminoglycans, histomorphology, sarcomas*

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INTRODUCTION

The term "Soft tissue" includes the nonepithelial extra-skeletal tissue of the body exclusive of the viscera, reticuloendothelial (lymphoreticular) system and coverings of the brain. Soft tissue tumors are a rare and heterogeneous group of tumors that arise from or show differentiation toward the mesodermally-derived connective tissue elements like fat, fibrous tissue, vessels, peripheral nerves, tendons, and fasciae. Myxoid soft tissue tumors constitute a group of lesions, both benign and malignant, with abundant extracellular myxoid matrix.[1] The myxoid matrix is composed of Glycosaminoglycans-sulphate (Chondroitin sulphate and Keratan sulphate) and non-sulphate (Hyaluronic acid).[2] Glycosaminoglycans (GAGs) are negatively charged and are highly hydrophilic forming a 'gel' state readily and result in the characteristic myxoid morphology when present in increased amount. The relative proportion of myxoid areas varies with some tumors being predominantly myxoid while others showing focal myxoid change. It appears on Hematoxylin & Eosin (H&E) sections as an amorphous basophilic substance. GAGs have high affinity for growth factors and cell adhesion molecules thereby

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Clinicopathological study of glomus tumors in a tertiary care hospital

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A CROSS-SECTIONAL STUDY TO ASSESS THE QUALITY OF LIFE AND MENTAL WELL-BEING OF WORK FROM HOME EMPLOYEES UNDER THE PRIVATE SECTOR DURING COVID-19 PANDEMIC IN TAMIL NADU

Community Medicine

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ABSTRACT

Background: Remote workers tend to live sedentary lives and lack social interaction. The fact that employees can work from home sometimes leads to increased fatigue, headaches, muscle pain, stress, and sleep disruptions. In light of these circumstances, we conducted this study to determine the quality of life and mental health of corporate employees working at home during the COVID 19 pandemic. **Methodology:** The study was conducted among 228 work-from-home employees in Chengalpattu district, Tamil Nadu in June 2021. A Google survey form was used to collect the data using WHOQOL BREF and DASS21 scales. Data was entered into an excel spreadsheet and analyzed using SPSS. We used proportions and mean ± SD for categorical and continuous variables. The chi-square test and Pearson correlation test were used. **Results:** Psychologically significant mean scores were found for people under the age of 20-30 years and people in joint families of 54.87±11.65 & 56.79±11.49, respectively. 31% of the participants had mild to extremely severe depression. QOL and DASS 21 showed negative correlations. **Conclusion:** There were a significant number of participants who suffered from depression, anxiety, and stress. Members of the joint family had a better quality of life.

KEYWORDS

Work from home employees, QOL, DASS 21

INTRODUCTION

The COVID-19 pandemic has altered every aspect of our work and life. Because of national and local containment policies, companies, organizations, and institutions encouraged their employees to work from home. In the early 2000s, telecommuting technologies contributed to the development of work from home (WFH). Workers could eliminate commuting, be more flexible, and achieve a better work-life balance by working at home. (1,2)

WFH allows employees to choose to work at times when they are most productive, and WFH can be beneficial for avoiding distractions from co-workers, especially in open-plan offices(3). When factors such as Indoor Environmental Quality (IEQ) (e.g., lighting temperature humidity air quality noise ergonomics etc are important for the physical and mental health of the workers, worker may have more control over these factors""(4). Particularly IEQ factors affect a worker's comfort which in turn affects their satisfaction""(5).

Despite the benefits of full-time WFH, there are numerous negative aspects as well. Employees who work from home are less likely to mingle with co-workers and may engage in fewer physical activities, such as walking between meetings (1). Due to extended hours, lack of or unclear delineation between work and home, and lack of support from the organization, blurring physical and organizational boundaries between work and home can negatively impact mental and physical health(6). It is possible that employees are required to work longer hours than their regular schedules, resulting in eye fatigue, headaches, musculoskeletal pain, stress, and sleep disturbances. Until the COVID-19 outbreak, WFH was not a prevalent method of working. The majority of employees who have never worked outside of the office have experienced WFH for the first time. WFH may become long-term or even permanent because of the uncertainty regarding when the pandemic will finish and possible COVID-19 contagion waves(7). Numerous studies have been done on WFH, but few have evaluated the quality of life and mental well-being of employees doing work from home during the covid 19 pandemic.

MATERIAL & METHODS

Study design: A Cross-sectional study

Study setting: Private employees doing work from home in Chengalpattu district, Tamil Nadu

Study duration: August 2021 - October 2021

Study population: People who are at work from home under the Private sector in Chengalpattu district.

Sampling technique: The current study combined a snowball sampling technique with a cross-sectional, web-based survey and recruited 228 remote workers who began to work from home for the first time after the COVID-19 pandemic has been declared.

Therefore, the snowball sampling method, which is a non-probability (purposeful) sampling method was used in this study. Survey and informative forms (names of researchers and their institutions, scope, and purpose of the study, participation criteria, data privacy commitment form, and survey instruments) were transferred to an online questionnaire. All responses were anonymous and no personally identifiable information was requested. The primary inclusion criteria for the participants were no remote working experience before the COVID-19 pandemic, and WFH at the time of the questionnaire.

Sample size:

Sample size = 228 with 90% Confidence level and 70% precision from the previous literature, above sample size, is calculated by using Open Epi software.

Inclusion criteria: The employee, who had spent most of his/her work time at an office desk and had transitioned to WFH due to the COVID-19 pandemic and those who are willing to participate in the study.

Exclusion criteria: Those who already taking medication for any illness are not included.

Operational definitions: The private sector constitutes the segment of the economy owned, managed, and controlled by individuals and organizations seeking to generate profit. Companies in the private sector are usually free from state ownership or control.

The International Labour Organisation (ILO) defines telework as the use of information and communications technologies (ICTs) including smartphones, tablets, laptops, or desktop computers for work that is performed outside the employer's premises(8).

The World Health Organization (WHO) has defined "QOL" as "an individual's perception of their position in life in the context of the culture and value systems in which they live and about their goals, expectations, standards and concerns"(9).

Cross-Sectional Study of Sexual Dimorphism in Lip Prints among Students Doing a Professional Course in Bengaluru

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Abstract

Background: Identification of human beings forms the basis of any criminal investigation. Lip print study, also known as cheiloscopy is the study of patterns formed by the ridges and grooves on the external surface of lips. This study aims to classify lip prints and study its correlation to sex.

Methodology: 205 student participants who volunteered were included in this study of which females were 123 and males were 82. A food safe pigment was applied to the lips. Over this pigment, the glued portion of the cellophane tape strip was placed and the subject was asked to make a lip impression in the normal rest position of the lips by dabbing it in the centre first and then pressing it uniformly toward the corners of the lips. The cellophane strip was then stuck to the white chart paper for permanent record purpose, then visualized by magnifying lens and analysed quadrant wise.

Conclusion The most common lip print in the upper lip was found to be type 3 and in the lower lip was found to be type 4. Statistically significant difference with respect to sex was observed in first quadrant only ($p = 0.01$) and not in others.

Keyword: Cheiloscopy, Lip prints.

Introduction

Identification of human beings forms the basis of any criminal investigation. Lip print study, also known as cheiloscopy is the study of patterns formed by the ridges and grooves on the external surface of lips[1]. It has gained importance as a prominent

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RESEARCH ARTICLE

STUDY OF BODE INDEX AS A PREDICTOR OF SEVERITY AND SYSTEMIC INVOLVEMENT IN PATIENTS WITH COPD

Dr. S. Pavani and Prof. Dr. R. Kulothungan

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Key words:-
Bode Index, COPD, Spirometry

Abstract

Introduction: Chronic obstructive pulmonary disease (COPD) is defined as a disease that is both preventable and treatable, with some significant extrapulmonary consequences. This study emphasizes the fact that the BODE index can be used to predict hospitalization and the severity of systemic involvement in COPD patients.

Materials and Methods: The present cross-sectional was conducted at KarapagaVinayaga Medical College, Chengalpattu, over a period of 10 months from March 2021 to November 2021, after the due approval of the ethical committee. A total of 120 patients aged 40 to 75 years were recruited by purposive sampling. Patients with symptoms suggestive of COPD as cases were included. Clinical examination and investigation like spirometry, ECG, 2D echo, chest X-ray and BMI were also recorded. Data were analysed using SPSS version 19.0.

Results:A total of 120 patients participated in this study. There wasa total of 80 (66.6%) males and 40 (33.3%) females among the study participants. The mean age of the study population was 57.8 years. The BODE score was significantly associated with the smoking status, the number of packyears of smoking, BMI, duration of hospital stay in the last two years.ECG axis was found to be normal in and mild groups. While 96% of patientsin the severe group are in RAD and 40% of patients in the severe group had LAD.

Conclusion: The BODE index is a reliable method for predicting hospitalization and the severity of systemic involvement in COPD patients. Because calculating the BODE index only requires a spirometer, which is relatively inexpensive and widely available, as a result, the BODE index can be used to guide the referral of COPD patients, preventing the waste of limited resources.

Introduction:-

Chronic obstructive pulmonary disease (COPD), one of the non-communicable diseases, is characterized by persistent airflow limitation that is usually progressive.[1]It is the leading cause of chronic morbidity and mortality worldwide, and it is expected to become the third leading cause of death globally by 2025 and in middle-income countries by 2030.[2] According to the global burden of disease study, COPD is expected to rise to the fifth leading cause of loss of Disability Adjusted Life Year (DALY) by 2020.[3] It also puts a significant economic and social burden on patients. According to a National Commission on Macroeconomics and Health background paper by

Corresponding Author:- Dr. S. Pavani

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RESEARCH ARTICLE OPEN ACCESS

Echocardiographic Parameters, Clinical Profile and Presence of *Streptococcus pyogenes* Virulent Genes in Pharyngitis and Rheumatic Fever

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REVIEW ARTICLE OPEN ACCESS

Streptococcal Pharyngitis and Rheumatic Fever

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Abstract

***Streptococcus pyogenes* (Group A *Streptococcus*) causes a variety of diseases, from benign self-limiting infections of the skin or throat to lethal infections of soft tissue accompanied by multi-organ failure. GAS is one of significant species among Gram-positive pathogens which is responsible for several suppurative infections and non-suppurative sequelae. They also cause pharyngitis, streptococcal toxic shock syndrome (STSS), necrotizing fasciitis and other diseases. Currently, global burden of RF / RHD is undervalued. In 2010, RF and RHD were estimated as 15.6 million cases and deaths around 200,000 annually. Laboratory diagnosis includes cultural techniques, serology, PYR test, Bacitracin susceptibility test and antibiotic resistance testing helps in differentiating the *Streptococcus pyogenes* from other groups of *Streptococci*. Most of the Acute Rheumatic Fever cases gets missed or does not present in the initial stage rather it has been developed into advanced Rheumatic Heart Disease condition. Modified Jones criteria in 2015 will be helpful especially to the low risk population as it is challenging because of limited access to primary health care, diagnosis of streptococcal disease. In addition to this revised criteria, diagnosis still relies on clinical diagnostic algorithm. Vaccines based on M protein and T antigens are continuing to evolve with different results. Ongoing vaccine development is still challenging for the GAS research community, it will make a positive and lasting impact on the peoples globally.**

Keywords: *Streptococcus pyogenes*, Pharyngitis, Rheumatic Fever, Pathogenesis, Vaccine strategies

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RESEARCH ARTICLE OPEN ACCESS

Neonatal Sepsis: The impact of Hypervirulent *Klebsiella pneumonia* in a Tertiary Care Hospital

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Abstract

Neonatal sepsis is a blood-stream infection that affects newborns under the age of 28 days. Sepsis is common in NICUs and has a high prevalence of *Klebsiella* species. As a result, the study aims to find the antibiotic resistance profile, virulence factors, and the prognosis of *K. pneumoniae*-infected neonates. A prospective study was conducted which included 140 neonates with clinical sepsis. Characterization of *Klebsiella pneumonia* isolates was done by conventional methods. Drug resistance and virulence factors were detected by phenotypic methods. Genotypic methods included 16s rRNA amplification and sequencing. Detection of multidrug-resistant genes by PCR was performed. *K. pneumoniae* (26.9%) was the most common pathogen isolated. A high prevalence of ESBL was detected (58.8%). The prevalence of CRKP and MβL was about 29.4%, and 23.5% respectively. Two strains were Strong biofilm producers and nine isolates showed Beta hemolysis.7 strains were positive for the string test. Four strains were positive for the wcaG gene. 3 positive for magA (K1) and 2 were for gene wzy (K2). Three isolates carried bla_{CTX-M}, four isolates harbored bla_{VIM}, two for IMP, and one for NDM and KPC gene. *K. pneumoniae* isolates in the NICU increased in frequency and antibiotic resistance. It is a serious hazard to the healthcare system, and it necessitates strict infection control methods in healthcare settings, as well as antibiotic stewardship to prevent the overuse of antibiotics in neonatal sepsis.

Keywords: Neonatal Sepsis, Hypervirulent *Klebsiella pneumonia*, Drug Resistance, Virulence Factors, Genotypic Methods

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Role of Whonet Software Beyond Antimicrobial Resistance in Clinical Microbiology

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A B S T R A C T

Whonet software introduced by WHO for surveillance of antimicrobial resistance. The scope of the study is that incorporation of quality control alerts in the software which leads to minimal laboratory errors, provides the clinicians therapeutic comments about antimicrobial therapy. Real time data entry of patient, sample details, microscopy and the culture workup were also entered. The antimicrobial susceptibility test results were fed directly in the Whonet software with a digital calliper. A scatter plot, a two-dimensional graph in which the points corresponding to two related or unrelated drugs were graphed and observed for positive and negative correlation of resistance pattern. Each antimicrobial was compared with all the other antimicrobials for cross resistance pattern and a consolidated checker-board table was created for all scatterplots. Whonet is used for the comparison of NS1 antigen with IgM antibody test results and thereby enabling the laboratory to get the feedback for the dengue testing policy regarding the need for NS1 antigen or IgM antibody or both. This software is more than a laboratory information system, that helps the laboratory technologist for proper documentation and reporting.

Introduction

Whonet is a computerized microbiology laboratory data management and analysis program introduced by World Health Organization for the surveillance of antimicrobial resistance worldwide. The software can help the microbiology laboratory in collating and analysis of antimicrobial susceptibility pattern results and guiding the clinicians for empirical therapy, monitoring the trend of antimicrobial resistance, helps in antimicrobial policy decisions and preventive measures. Whonet can be used in a resource limited laboratory setting, facilitates by sharing and analysis of data among various levels of laboratories as part of national antimicrobial resistance surveillance program. The cumulative antibiograms obtained from various hospitals may help in formulating antimicrobial policies and control measures at national level. Besides, the Whonet software can facilitate the laboratory in the pre-analytical, analytical, and post analytical activities such as

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Original Article

Pathology Section

Immunohistochemical Evaluation of Myxoid Sarcomas- A Tertiary Care Hospital Experience

KARTHIK SIGAMANI[1], KARKUZHALI PONNUSWAMY[2]

ABSTRACT

Introduction: Myxoid sarcomas are a rare and heterogeneous group of tumours exhibiting overlapping histomorphological features with varied biological behaviour. Hence, additional ancillary techniques like Immunohistochemistry (IHC) are necessary for definite diagnosis and categorisation of the myxoid sarcomas.

Aim: To identify the distribution of myxoid sarcomas among patients and also to evaluate the utility of basic IHC in the diagnosis of myxoid sarcomas.

Materials and Methods: This was six years retrospective observational cross-sectional study carried out in the Department of Pathology, Madras Medical College and Rajiv Gandhi Government General Hospital, Chennai, Tamil Nadu, India, during the period of January 2008-December 2013. Relevant pathological data of all the myxoid sarcomas reported during the study period were retrieved from the medical records. Corresponding Haematoxylin and Eosin (H&E) stained slides were reviewed and IHC was done using a panel of markers for confirmation.

Results: Among the 57 myxoid sarcomas, 46% occurred in the age group of 41-60 years with a striking male preponderance (74%). Myxofibrosarcoma was the most common histological type (33.33%). All cases of myxofibrosarcoma were positive for vimentin while two cases showed focal Smooth Muscle Actin (SMA) positivity and one case showed focal CD34 positivity. Low grade fibromyxoid sarcomas were positive for only vimentin. Myxoid liposarcomas and extra-skeletal myxoid chondrosarcomas showed vimentin and S100 positivity. Myxoid Dermato Fibrosarcoma Protuberans (DFSP) was positive for vimentin and CD34 while synovial sarcoma with myxoid change was positive for vimentin and Pancytokeratin (Pan CK). Myxoid Malignant Peripheral Nerve Sheath Tumour (MPNST) showed 100% vimentin and S100 positivity while CD34 was positive in 12.5% of cases. Leiomyosarcoma with myxoid change was positive for vimentin, SMA, desmin and Pan CK.

Conclusion: The IHC is a valuable adjunct to light microscopy for the diagnosis of myxoid sarcomas and can provide as a judicious tool for diagnosis of this uncommon and challenging group of malignant soft tissue tumours.

Keywords: Glycosaminoglycans, Immunohistochemistry, Malignant, Soft tissue, Tumours

INTRODUCTION

Soft tissue sarcomas are uncommon and heterogeneous group of malignant tumours that show differentiation towards connective tissue elements like vessels, fat, fibrous tissue, peripheral nerves and tendons. Soft tissue sarcomas are relatively rare lesions accounting for less than 1% of all malignancies [1]. Among the soft tissue sarcomas, certain tumours are characterised by abundant extracellular myxoid matrix and are referred to as myxoid sarcomas [2]. The myxoid matrix in these subset of sarcomas is composed of sulphated and non sulphated Glycosaminoglycans (GAGs) [3]. The physical properties (increased viscosity and low compressibility) of GAGs favour the migration of tumour cells and the diffusion of metabolites thereby facilitating the growth of tumour cells [4,5]. Sulphated GAGs like chondroitin sulphate also modulate the survival of tumour cells by preventing apoptosis and promoting tumour cell proliferation. Myxoid matrix also possess high affinity for cell adhesion molecules and growth factors thereby facilitating cell to cell interaction and cell proliferation [6]. All these factors contribute to the highly malignant behaviour of sarcomas with GAGs rich Extracellular Matrix (ECM). Many of these sarcomas exhibit overlapping histological features thereby necessitating additional ancillary techniques like IHC for definite diagnosis and categorisation of the myxoid sarcomas [2]. IHC plays a vital role in the diagnosis of myxoid tumours of soft tissue and it is used as a complement to morphological diagnosis. It helps to rule out the non mesenchymal tumours and also for categorising the sarcomas into their specific lineage of differentiation [7]. Use of a single immunostain will lead to potential misdiagnosis due to the lack of markers [8]. Use of a panel of immunohistochemical markers based on the H&E differential diagnosis will lead to a correct diagnosis of this challenging group of tumours [9]. The antibodies most commonly employed in soft tissue tumour pathology are Vimentin, SMA, Muscle Specific Actin (MSA), S100, CD34, CD99, Desmin, Myogenin, Cytokeratin and Epithelial Membrane Antigen (EMA). There is very limited comprehensive data in literature regarding the immunohistochemical characteristics of this broad group of myxoid sarcomas, though there have been isolated studies on few individual tumours in this group. Hence, this study was intended to determine the basic immunohistochemical profile of myxoid sarcomas. The objectives of this study was to identify the distribution of myxoid sarcomas among patients admitted in Rajiv Gandhi Government General Hospital, Chennai, Tamil Nadu, India, and to evaluate the utility of basic IHC in the diagnosis of myxoid sarcomas.

MATERIALS AND METHODS

The present study was a six years retrospective observational cross-sectional study carried out in the Department of Pathology, Madras Medical College and Rajiv Gandhi Government General Hospital, Chennai, Tamil Nadu, India, during the period of January 2008-December 2013 the analysis of the study was done from January to March 2014 after approval by the Institutional Ethics Committee. (IEC Ref No: MMC/03032012). Informed consent was obtained from all the patients while receiving the biopsy samples in the Department of Pathology.

Sample size calculation: A total of 57 samples were collected using purposive sampling technique for selection of desired samples

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Prevalence of styloid process elongation on digital panoramic radiography in South India population from Chengalpet district

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SUMMARY

The styloid process (SP) arises from the temporal bone in front of the stylomastoid foramen. Many nerves and vessels are adjacent to the SP. The length of the SP is usually 2-3 cm; if it is longer than 3 cm, it is considered elongated. The elongated SP may compress adjacent neurovascular structures, and cause neck and cervicofacial pain. This study aims to determine the prevalence of SP elongation detected on digital panoramic radiographs in the south Indian population from the Chengalpet region and its relation to gender, age, sides and types. Digital panoramic radiographs of 1000 patients with an age ranging from 10 to 80 years were retrospectively obtained from a private dental college. The subjects were divided into six age subgroups: 10-19, 20-29, 30-39, 40-49, 50-59, and 60 years and older. The apparent length of the SP was measured from the point where it left the temporal bone to its tip. SP measuring more than 3 cm were considered to be elongated. The data were analyzed by using Student's t-test and Chi-square test with a P value less than 0.05. The study findings reported that SP elongation was present in sixty-two (6.2%) patients. The prevalence of SP elongation in males was slightly higher than in females. In males, there was a statistically significant difference found between age groups. The prevalence of SP elongation was increased as the age increased. The most frequently observed type of elongation was the type I elongation. The digital panoramic radiographs are an economical, easily accessible and useful diagnostic tool for early detection of SP elongation. It was found that the elongated SP is an anatomical variation, which must be taken into account by practitioners while treating the patients with head and neck pain.

Key words: Eagle's syndrome – Elongated styloid process – Panoramic radiographs – South Indian population

INTRODUCTION

Styloid Process (SP) is derived from the Greek word *stylos*, meaning a pillar (AlZarea, 2017). The

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Short duration of OM chanting on autonomic function in young healthy volunteers

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Abstract

Background: Yoga relives the stress but the beneficial response elicited by Omkara chanting on autonomic function is not clear. Therefore this study has been done to look for the significant difference in the autonomic modulation between genders on chanting Omkara.

Aim: To assess the effect of OM Chanting on autonomic modulation between Males and Females.

Materials and methods: 60 MBBS students between the age of 18 and 25 years were divided into study groupof 30 students who were given OM Chanting training and 30 for controls who were not given OM Chanting training. Each group had equal participants from each genders. The study group were given OM Chanting training for 30 minutes for 30 days and HRV was recorded before and after the Yoga intervention, using PHYSIOPAC software for both the groups and the basal cardiovascular parameters like heart rate, blood pressure and parameters of HRV such as standard deviation of all normal RR intervals (SDNN),mean RR interval, percentage of adjacent RR intervals with a difference of duration greater than 50 msec (PNN50) and root mean square of differences between adjacent normal RR intervals (RMSSD)were analysed using HRV analyser Software.

Results: There were significant decrease in heart rate in females (p=0.0006) and increase in mean RR interval in females (P=0.0004) was observed in study group.

Conclusion: OM chanting training enhances the parasympathetic activity which is more prominent in females.

Keywords: OM Chanting, Heart Rate Variability, SDNN, RMSSD, PNN50

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Introduction:

This present speed and competition has increased the stresses and strains in our body. It is resulting in life style related health problems such as Obesity, Diabetes Mellitus, Hypertension and Coronary Artery Disease.[1] Cardiovascular disease has become a major cause of mortality in developing nations in the age group of 30- 69 years, the cardiovascular mortality due to hypertension is seen more in developing nations.[2,3] Psychosocial stresses of our modern life precipitates various cardiovascular disorders by distorting basic neurological and endocrine mechanism. The psychosocial stresses activate hypothalamus and limbic system which stimulate autonomic nervous system. Increase in both adrenaline and nor-adrenaline, both from sympathetic nerve fibres as well as from adrenal medulla causes increase in heart rate and blood

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Levels of Galectin-3 in Chronic Heart Failure: A Case-Control Study

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Abstract

Introduction

Heart failure (HF) is a progressive clinical syndrome resulting from various cardiac disorders. Galectin-3 promotes adverse cardiac remodeling leading to chronic heart failure (CHF).

Aim

To estimate the levels of galectin-3 in chronic heart failure (CHF) patients and controls and to determine the association between galectin-3 levels with age, gender, and left ventricular ejection fraction (LVEF).

Materials and methods

The levels of plasma galectin-3 were estimated in CHF patients from January 2013 to October 2013 at Rajiv Gandhi Government General Hospital, Chennai, Tamil Nadu. The study was a case-control study. A total of 55 CHF patients were recruited as cases, and 55 controls were enrolled for the study. Participants' profiles were documented, and 5 mL of blood sample was collected. Galectin-3 levels in plasma were estimated by using an enzyme-linked immunosorbent assay (ELISA). Data were analyzed using SPSS 25.0 version. Mean, SD, and percentages were used to compare the characteristics of the two groups. The student's t-test was used to compare galectin-3 levels between CHF patients and the controls. ANOVA was employed to compare galectin-3 levels in the different age groups, gender, and LVEF. The receiver operating characteristic (ROC) curve was plotted for plasma galectin-3 in CHF.

Results

In the present study, the mean age of CHF patients was 55.9±8.1 years and 54.1±9.4 years for controls. Males constituted 63.6% (n=35) and females were 36.4% (n=20) in the CHF group while 67.3% (n=37) were males and 32.7% (n=18) were females in the control group.

The mean and SD for plasma galectin-3 was 9.95±2.8 ng/mL among CHF patients, while it was 4.08±1.3 ng/mL among controls ($p<0.0001$). As the age increased, levels of plasma galectin-3 increased in CHF patients and controls ($p<0.00001$). However, there was no statistical significance ($p>0.05$) for levels of galectin-3 among males and females in both groups. There was a highly significant difference in galectin-3 levels among cases and controls when classified into sub-groups based on their LVEF ($p<0.0001$). At the cut-off level of 8 ng/mL, plasma galectin-3 had a sensitivity of 92% and specificity of 71% in predicting CHF.

Conclusion

Galectin-3 helps in identifying CHF due to maladaptive remodeling of the heart. The present study concludes that estimating the plasma levels of galectin-3 is useful in diagnosing CHF.

Categories: Cardiology, Endocrinology/Diabetes/Metabolism, Pathology
Keywords: galectin, collagen, pathogenesis, cardiac remodeling, heart failure, biomarkers

Introduction

Heart failure (HF) is a progressive clinical syndrome resulting from various cardiac disorders. Multiple factors are responsible for the pathogenesis of HF. Some are cardiomyocyte damage, inflammation, and neuro-hormonal activation [1]. The prevalence of HF in India was about 10 million patients based on the INDUS study in 2016 [2]. HF in the initial stage is clinically silent. However, ongoing cardiac remodeling is well documented during this phase. Clinical diagnosis of HF is challenging and has reduced diagnostic significance as the major symptoms of HF overlap with many other clinical conditions. This emphasizes the need for addressing a molecule involved in the pathogenesis rather than the symptom of the disease process.

Galectin-3, a member of the galectin family, is a vital factor in the pathophysiology of HF, chiefly due to its

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Original Article

Biochemistry Section

Patients and Clinicians Satisfaction with Clinical Laboratory Services at a Tertiary Care Hospital: A Cross-sectional Study

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ABSTRACT

Introduction: Clinical laboratories are an essential part of the healthcare system providing vital information required for patient's care. As the importance of monitoring the satisfaction status is becoming necessary and no data regarding the same is available in this region, so present study was designed to implement it in the institution.

Aim: To estimate the clinicians and patients satisfaction status with the services provided by the Central Clinical Laboratory, Karpaga Vinayaga Institute of Medical Sciences and Research Centre (CCL-KIMS and RC) in Kanchipuram District, Tamil Nadu, India.

Materials and Methods: A cross-sectional study was conducted in the Central Clinical laboratory, Karpaga Vinayaga Institute of Medical Sciences and Research Centre, a tertiary care Medical college hospital in Kanchipuram district, Tamil Nadu, India between April 2019 to December 2019 in three phases including a total of 150 clinicians and 150 patients. The patient's satisfaction status was assessed using questionnaires by the investigator. Self-administered structured questionnaire was used for determining the clinician's satisfaction status. Likert scale was used and the mean score of satisfaction for each, patients and clinician was calculated. Data entry and analysis was done using Statistical Package for the Social Sciences (SPSS) 25.0 V software. Chi-square test was used to find out the association between satisfaction status and the different attributes. Spearman's correlation was performed to assess the relationship between the satisfaction status and the different phases of the study.

Results: In present study, the mean age of patients was 38.0±11.6 years and clinicians 42.9±8.7 years, respectively. Majority of participants among patients were females 82 (54.7%), and clinicians were males 105 (70%). Among patients 95% were married 63.3%, 135% came from the middle category of socio-economic status (90), while 122% resided in the semi-urban area 81.3%. 101 of the clinicians (67.3) had an experience of more than three years at KIMS and RC. Overall 131 (87.3) of the patients and 106 (70.7) of the clinicians were satisfied with the services provided by the central clinical laboratory at KIMS and RC. An improvement in the satisfaction status of the patients and clinicians from phase I to III was observed. Around n=19 (12.7%) and n=44 (29.3%) of the patients and clinicians were dissatisfied with the laboratory services.

Conclusion: In the present study, the overall level of patients and clinicians satisfaction status was high and satisfactory. An improvement in the observed satisfaction status from phase I to III was attributed to the trainings given to the laboratory staff on the international standards of laboratory management. Domains like the turn around time, interface of laboratory and hospital information system and waiting time for specimen collection required improvement.

Keywords: Attitude of health personnel, Clinical laboratory standards, Patient care, Quality assurance, Quality improvement tool

INTRODUCTION

Clinical laboratories are an essential part of the healthcare system providing important information required for patient's care [1-3]. Customer satisfaction with the services provided in a medical laboratory is one among the 12 quality essentials of Total Quality Management System (TQMS). It is emphasised by all the standards for quality assurance including ISO 17025, ISO 15189 and ISO 9001 [4]. Customers' satisfaction is an expression of the gap between the expected and perceived characteristics of a service. Customers reviewing a healthcare facility are patients, their relatives, physicians, paramedical staff, health officials, communities and interested parties [4].

In developing countries services from the healthcare sectors have an overwhelming work load, due to which the focus on the concept of quality in the care provided is neglected, although it is the right of the beneficiary [5]. Needs of patients should be taken into account, as the assumption, of them to be uneducated with few options for healthcare services is invalid. They are well educated and aware of the healthcare choices. Recently, accreditation bodies for a hospital improvement of the services provided [6,7]. It is in contrast to the traditional assessment of healthcare which emphasised on technical improvements only [8,9].

The customer is the king in medical laboratory services and their satisfaction is core in quality of healthcare delivered. Services provided are meaningless when it does not satisfy its users. Periodically analysing patients and clinicians satisfaction with the healthcare services provided has a vital role in prioritising the funds and implementing the essentials required for the laboratory in a timely manner [4].

Patients are referred as the main value of the clinical environment. They are the reason for all works and therefore work cannot be done without them. Patient's satisfaction has a positive effect on their recovery from illness, patient's willingness to follow-up in the same institution, appropriate clinical care by physicians and job satisfaction for all healthcare personnel [8,10]. Customer satisfaction gives an opportunity to identify the deficiencies between the expected versus received care. Comforting and reassuring the apprehensive patients prior to sample collection by a well trained phlebotomist who is the first person a patient meets in the lab [illegible] was found to be an

ORIGINAL ARTICLE PEER-REVIEWED

Levels of Galectin-3 in Chronic Heart Failure: A Case-Control Study

Altaff Khadeja Bi, Viswan Santhosh, Karthik Sigamani

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Abstract

Introduction

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Aim

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Materials and methods

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Results

In the present study, the mean age of CHF patients was 55.9±8.1 years and 54.1±9.4 years for controls. Males constituted 63.6% (n=35) and females were 36.4% (n=20) in the CHF group while 67.3% (n=37) were males and 32.7% (n=18) were females in the control group.

The mean and SD for plasma galectin-3 was 9.95±2.8 ng/mL among CHF patients, while it was 4.08±1.3 ng/mL among controls (p<0.0001). As the age increased, levels of plasma galectin-3

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Efficacy and Safety of Intravenous Palonosetron against Ondansetron in Preventing Postoperative Nausea Vomiting in Patients Undergoing General Anaesthesia: Double blind Randomized Control Study in Tertiary Care Hospital, Tamil Nadu, India

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Post operative nausea vomiting (PONV) is distressing for patient as well as clinician as it affects post-operative care and recovery substantially. Causes of PONV are multi factorial which are primarily categorized into patient related factors, pre- surgical factors and post-surgical factors. There are several classes of drugs that constitute basic of anti-emetic therapy. Primary objective of the study is to assess the efficacy and safety of intravenous (IV) Palonosetron in preventing post operative nausea vomiting (PONV) in comparison with IV ondansetron. This is a double blinded randomized controlled study conducted during the period of January 2015 to February 2016 in patients with ASA (American Society of Anesthesiologist) grade I category who underwent surgical intervention under general anaesthesia. Both male and female patients in the age range of 15-60 years with ASA grade I status and willing to give written informed consent were recruited for the study. 116 out of 129 patients were recruited for the study based upon inclusion and exclusion criteria. The patients were randomly assigned to two equal groups, Group A, who received palonosetron 0.075 mg intravenously and Group B, who received ondansetron 8 mg intravenously. The efficacy and safety of palonosetron was tested on the use of ondansetron. Statistical analysis was done by Chi-square test and Student t-test. P value less than 0.05 was considered statistically significant. Efficacy of palonosetron was assessed by complete response (CR), use of rescue medication, gratification score and severity of nausea. The P value of all efficacy parameters was <0.05 which was statistically significant. Safety parameters include adverse reactions related to palonosetron or other adverse drug events. Adverse drug reactions were less in group A compared to Group B. Palonosetron was more efficacious than ondansetron in controlling PONV in a post-surgical patient undergoing general anaesthesia. Palonosetron was found equally safe as ondansetron.

Keywords: General Anesthesia; Ondansetron; PONV; Palonosetron; Postsurgical vomiting.

National Journal of Physiology, Pharmacy and Pharmacology

RESEARCH ARTICLE

Drug prescribing pattern in obstructive airway disorders in a tertiary care hospital, Chengalpattu, Tamil Nadu: A cross-sectional and observational study

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ABSTRACT

Background: The term obstructive airway disorder comprises of bronchial asthma and chronic obstructive airway disease (COPD). Asthma is a chronic inflammatory disorder of airways while COPD is disease of alveoli. Asthma is characterized by recurrent episodes of wheezing, breathlessness, and nocturnal cough while patients of COPD present with chronic progressive breathlessness and wheezing. International guidelines are established for the management of obstructive airway disorders. **Aims and Objectives:** The aim of the study was to evaluate drug prescribing pattern in bronchial asthma and COPD patients at a tertiary care hospital. **Materials and Methods:** After obtaining permission from hospital authority and permission from the Institutional Ethics Committee, 54 admitted patients' prescription were screened between period of June 2021 to December 2021. Informed consent taken from the patients and were interviewed for collection of basic data such as name, age, and occupation. The purpose of the observational study was to see whether there is adherence to current practice guidelines of obstructive airway disorders. Data were compiled and tabulated using excel sheet and were presented using percentages and frequencies with necessary graphs and charts. **Results:** Short acting β_2 agonist (91%) and corticosteroids (59%) were the most prescribed agents in bronchial asthma while corticosteroids (75%) and short acting antimuscarinic agents (78.57%) were most common prescription in COPD patients. The most common antibiotic used for in obstructive airway disease was beta lactam antibiotic-cefotaxime. **Conclusion:** In obstructive airway disorders, inhalation route was most preferred route as compared to oral, intramuscular, or intravenous route. The preferred antibiotic was cefotaxime.

KEY WORDS: Asthma; Obstructive Airway Disorder; Chronic Obstructive Airway Disease; Drug Prescription Pattern; Antibiotic Pattern

INTRODUCTION

The term obstructive airway disorder (OAD) includes two diseases, namely, bronchial asthma and chronic obstructive airway disease (COPD). Both are inflammatory disorders with bronchial asthma primarily affecting airways and COPD is associated to alveolar pathology. Asthma is characterized by recurrent episodes of wheezing, breathlessness, and nocturnal cough usually associated with widespread but variable airflow obstruction.[1] COPD is preventable and treatable disease with persistent airflow limitation due to airway and alveolar abnormalities.[2]

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The global prevalence of asthma and COPD accounts to 1–18% and 10.3%, respectively, in different populations.[1,2] There are multiple factors involved in pathogenesis of OAD.

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RESEARCH ARTICLE OPEN ACCESS

A Comparison Study of CBNAAT, Gene Xpert and Line Probe Assays in the Diagnosis of Tuberculosis in Smear Negative Specimens

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Abbreviations: MTB: *Mycobacterium tuberculosis,* Z-N: Ziehl-Neelsen, AFB: Acid Fast Bacilli, LJ: Lowenstein-Jensen, MGIT: Mycobacteria Growth Indicator Tube, CBNAAT: Cartridge based nuclear acid amplification test Xpert-MTB, LPA: Line Probe Assay Genotype MTBDRplus (VER 2.0), MDR: Multi Drug Resistant, WHO: World Health Organization.

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