

## 1. Bone Marrow Profile in Elderly: Hospital Based Study

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**Introduction:** Hematopoietic system is affected by the age as indicated by the continuous decrease in bone marrow elements. By age 70 years, the hematopoietic cellularity of bone marrow in the iliac crests is reduced to 30% of that in young adults. Increased longevity is associated with an increased risk of acquiring blood disorders whether malignant or non malignant.

**Objective:** To study the bone marrow profile and to compare bone marrow aspiration and bone marrow biopsy in haematological and non haematological disorders in elderly.

**Methodology:** It was a cross-sectional observational study done in the department of Medicine and department of Pathology in IGMC Shimla during period of one year from June 2013 to May 2014. All consecutive patients above 60 years of age referred for bone marrow examination were taken. Patients were subjected to bone marrow aspiration and biopsy procedure from post iliac spine.

**Results:** Total 83 patients underwent bone marrow examination, 56.6% (47) were males and 43.3% (36) were females. Average age of presentation was 70.1 years with maximum patients (41) in age group 60-69 years. Indications for procedure were multiple myeloma in 19 (22.9%), anaemia 18 (21.7%), haematological malignancy in 10(12%), pancytopenia in 10(12%), NHL (for staging) 10 (12%) bone marrow infiltration in malignancy 5 (6%). Haematological findings were seen in 65 (88.3%) patients and non haematological finding in 4 patients (4.8%). 16.8% (14) patients had normal examination. Most common finding among the haematological diagnosis was of anaemia in 28 (43%) followed by multiple myeloma in 15 (23.7%) and NHL in 10 (15.4%) patients. Among the non haematological diagnosis 3 patients had metastasis bone marrow and one patient demonstrated LD bodies. Dry tap/bloody tap were seen in 11 patients. We compared bone marrow aspiration vs. bone

marrow biopsy and observed that disorders diagnosed solely on bone marrow biopsy were Primary myelofibrosis, Aplastic anemia, and Bone marrow necrosis.

**Conclusion:** Common haematological disorders seen in elderly were anaemia, multiple myeloma, and NHL infiltration. Non haematological disorders were less common. Bone marrow aspiration and trephine biopsy were comparative in most of haematological disorders except in primary myelofibrosis, aplastic anaemia, bone marrow necrosis.

## 2. Nutritional Supplementation and Nordic Walking Exercise for Frail Older Patients: A Randomized Controlled Trial

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**Introduction:** Frailty imparts a great risk of recurrent hospitalisation, morbidity and mortality with very little curative management strategy till date. Any intervention that improves frailty will reduce the health care burden. Few studies have shown benefit with nutrition and exercise.

**Objectives:** To compare the effects of nutrition and specifically designed exercise intervention on frail older patients.

**Methodology:** In a Randomized controlled Trial (RCT), 44 frail subjects (mean age 76 years) diagnosed as per Fried's criteria were randomly assigned to group A and B. Group A received nutritional intervention in the form of dietary advice, supplemental protein and calories and Group B received exercise intervention in the form of Nordic walking. Interventions were given for a period of 6 months. Gait speed, grip strength, frailty score were monitored before and after intervention

**Results:** Mean gait speed in group B improved significantly {0.37m/s to 0.47m/s (p<0.001)} but not in group A {0.38m/s to 0.44m/s (p=0.078)} respectively. Mean grip strength improved significantly in both groups, (group A - 4.37kg to 8.58kg (p<0.001); and group B - 4.82 kg to

6.95 kg ( $p=0.003$ ). Mean frailty score showed significant change {4.63 to 3.37( $p<0.001$ )} in group A only.

**Discussion:** This RCT compares the effectiveness of two interventions specifically targeting frailty- nutrition and exercise, in modifying the frailty status of older persons. It establishes a new approach to the treatment of older people at risk of functional decline and institutionalization.

**Conclusion:** Significant improvement in grip strength and frailty status was seen in group receiving nutritional intervention. Nordic walking did not show significant benefit in modifying frailty status, but improved functionality.

### 3. Solitary Pulmonary Nodule in Old Age: A Diagnostic Dilemma!

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**Introduction:** Solitary Pulmonary Nodule (SPN) is an intrapulmonary lesion with diameter  $\leq 3$ cms or less, not associated with lymphadenopathy or atelectasis. Differentiation from malignancy needs exhaustive diagnostic approach. Regular follow-up in most helps rule out malignancy as majority are benign.

**Case Report:** 75 years old female was admitted with complaints of fever since 2 weeks. There was history of anti-tubercular treatment in past for Pulmonary Tuberculosis. Routine investigations were within normal limits. Chest X-ray revealed evidence of old fibrosis left upper zone, with well circumscribed, slightly oval shaped opacity in right mid and lower zones. Sputum was negative for AFB & malignant cells. Because of heavy smoking in the past & advanced age, CECT Chest was done. It showed fibrosis left upper lobe and a nodular lesion with smooth margins (3cms X 2.8cms) in right middle lobe, with minimal contrast enhancement. Malignancy was suspected in view of age and smoking status. Bronchoscopy showed normal tracheobronchial tree. BAL was negative for AFB & malignant cells. CT guided FNAC revealed benign hamartoma. Patient responded to broad spectrum antibiotics.

**Result:** SPN in old treated PTB in geriatric age is more likely a healed granuloma or benign fibrosis. Diagnostic dilemma and exhaustive workout may cause complications. Close follow up is thereby recommended.

### 4. KNIT (Know, Number, Intervene, Time) Pilot Study: Stroke-Care Knit Together

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**Introduction:** Stroke incidence is increasing in India along with rise of NCDs (non-communicable diseases), but current stroke care is often disjointed and delayed. This leads to considerable disability and handicap among Indian stroke survivors, especially amongst the elderly and the most vulnerable.

**Objectives:** 1. Study the feasibility of running a well-coordinated/ well-knit stroke care service all the way from pre-hospital home base in the community back to the community.

2. Identify the existent system challenges and barriers of developing objective 1 by assessing relevant baseline and follow-up information.

**Methods:** Open, non-randomized, pilot/ feasibility study of consecutive stroke patients coming to an established stroke unit in a large public sector tertiary care hospital in Kerala. We plan to recruit 100 patients across the current and post-intervention phases. Intervention will include stroke symptom recognition, timely care delivery and use of a local hotline, by educating the lay persons, ambulance drivers and hospital staff about such. Outcomes measure the system changes required.

**Summary:** This is an upcoming clinical trial soon to start recruitment. We plan to have main studies across multiple sites in future, once we identify specific system challenges.

### 5. Bronchogenic Carcinoma of Lung and Aspergillosis: Intriguing Yet Unexplored

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**Introduction:** Aspergillus is a saprophytic mold that causes a wide spectrum of respiratory diseases in humans. The incidence of bronchogenic carcinoma is on the rise attributed to the advanced diagnostic modalities and smoking and environmental factors. However the prevalence of invasive

pulmonary aspergillosis with bronchogenic carcinoma is still unfathomed in the literature.

**Case Report:** We herein report a case of a 63 years old diabetic female who was a diagnosed case of bronchial asthma since the last 15 years. She presented with the complaints of increased shortness of breath, chest pain and cough with expectoration for the last one month. On examination she had bilateral wheeze and her oxygen saturation was 70%. Her chest x-ray and CT scan depicted multiple thick walled cavitary lesions in bilateral lung fields. Her sputum examination was negative for AFB but culture revealed the growth of aspergillus fumigatus. Her total serum IgE and aspergillus specific total IgG and IgE were within the normal limits. An ultrasound guided biopsy of the above mentioned cavity revealed squamous cell carcinoma.

**Result:** The diagnosis of invasive pulmonary aspergillosis with bronchogenic carcinoma is difficult to make as both of them have similar radiological picture and the sensitivity of fungal culture is low. However the early diagnosis and initiation of antifungal therapy may improve outcome in these patients. In one study the frequency of invasive aspergillosis with bronchogenic carcinoma was 40.6% clearly presenting the fact that this clinical entity is hugely under recognised. This case report aimed at highlighting this common yet unexplored entity.

## 6. TUG Score as a Predictor of Adverse Health and Functional Decline in the Oldest Old

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**Introduction:** One of the most striking features of modern society is the steady increase in the life expectancy, with the oldest old population ( $\geq 85$  years) being the fastest growing segment of the population. This is the age group with the highest burden of non-communicable degenerative diseases, chronic functional disabilities and cognitive decline. TUG score is a quick and widely used clinical performance-based measure of lower extremity function, mobility and fall risk and has a potential to be a simple and inexpensive biomarker of ageing.

**Objectives:** To study the health and functional decline in ambulatory elderly aged  $\geq 85$  years and to detect association between TUG score and multi-morbidity, functionality and cognitive impairment.

**Methodology:** A total of 100 Oldest old subjects receiving treatment from the Department of Geriatric Medicine, were subjected to a detailed multi-dimensional assessment which included Barthel's scale for Activities of Daily Living, Lawton's scale for Instrumental Activities of Daily Living, HMSE for cognitive assessment and Timed Up and Go test (TUG) for overall functionality.

**Results:** Mean (S.D.) age of the participants was 86.18 (2.51) years, 66% were males and 34% were females. Mean (S.D.) number of diseases were 3.1(1.8), 83 % of patients had multi-morbidities. 45% and 69% subjects were dependent for BADL and IADL respectively. 35% patients were having cognitive impairment. An increased TUG score was associated with decreased functionality, more cognitive impairment and more comorbidities.

**Discussion:** Cognitive impairment, multi-morbidity and decreased functionality were very common in the oldest old. TUG score, a simple, quick and inexpensive test was found to have significant association with the functional decline, cognitive state and number of comorbidities.

**Conclusion:** TUG score can be a simple predictor of functional decline, cognitive impairment and multi-morbidity in the oldest old.

## 7. Pre Treatment Quality of Life in Older Cancer Patients: A Persistent Predictor of Survival

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**Introduction:** Health-related quality of life (HRQoL) at initial visit may predict survival of older patients with cancer.

**Objective:** To investigate the predictive role of HRQoL and other domains captured by the EORTC QLQ C-30 Questionnaire on their survival.

**Methods:** In a prospective, longitudinal, single center study, QLQ C-30 (Hindi version) was filled up by 300 patients in Geriatric Medicine OPD with a tissue diagnosis of cancer. High scores for functioning dimensions on the questionnaires indicated better QOL, and low scores for symptom dimensions on the QLQ C-30 indicated few symptoms. Cox regression modelling was used to identify predictive factors of survival.

**Results:** Out of 300 patients, 260 questionnaires could be used for analysis as 25 had to be abandoned due to incomplete filling and 15 due to non-cooperation. On QLQ C-30, for the

functioning dimensions, the highest mean score was for cognitive functioning ( $74.6 \pm 25.9$ ) and the lowest was for role functioning ( $47.2 \pm 34.1$ ). For symptom dimensions, the lowest score was for diarrhoea ( $11.5 \pm 24.2$ ) and the highest was for fatigue ( $59.7 \pm 27.7$ ). Among the various domains, functionality (p value-0.000), role play (p value-0.000), emotional domain (p value 0.005) and QoL (0.0008) was related to survival. Among symptoms, fatigue (p value-0.004) and pain (p value-0.0002) had significant relationship with survival.

**Discussion:** Adding to previous knowledge about factors that may influence patients QoL like functional impairment, this study shows a persisting relationship between pre-treatment global QoL, emotional condition and symptoms like persistent fatigue and pain in older individuals and survival.

**Conclusion:** Using these scores in clinical practice might improve prognostic prediction for treatment planning.

## 8. Biomarkers of Frailty in Ageing Population

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**Introduction:** Frailty is defined as diminished physiological reserve across multiple homeostatic systems resulting in diminished capacity to respond to external stressors. Frailty predisposes older individuals to increased risk of adverse outcomes like mortality, dependency and hospitalization. Identifying this complex entity through novel diagnostic biomarker(s) in early stage, to reverse or halt the progression; is generating enormous research interest in geriatrics and gerontology.

**Objectives:** To identify physical and biochemical markers of frailty in older adults

**Methodology:** Older adults under treatment from the Department of Geriatric Medicine of All India Institute of Medical Sciences, New Delhi were divided into robust and frail groups based on frailty phenotype of Fried et al and frailty index of Rockwood. They were assessed for physical parameters, cognitive status and specific biochemical markers such as Vitamin D, thyroid function tests, inflammatory markers (IL-6 and CRP) and novel proteins Sirtuin 1 and 2.

**Results:** 143 patients (89 frail and 54 robust patients; mean age-  $78.8 \pm 8.6$  years) were included in the study. Frail patients had significantly lower

levels of sirtuin 1 and 2, when compared to non-frail ones. Similarly those classified as frail by Rockwood's criteria has higher levels of IL-6 and CRP.

**Discussion:** Frailty prevalence increased with age in various demographic studies. Sirtuin 2 levels, T4 levels similarly showed a trend towards significance being lower in frail as compared to non frail patients. Markers like IL6, CRP were increased which are indicative of nonspecific immune mediated tissue injury.

**Conclusion:** Early diagnosis of frailty through one signature biomarkers remains an enigma. Further research to device a set of biomarkers will be more helpful in predicting this condition.

## 9. Evaluation of Serum Crp and Procalcitonin in Acute Exacerbation and Stable phases of COPD

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**Introduction:** Chronic obstructive pulmonary disease (COPD) is one of the leading causes of morbidity and mortality in adults worldwide. Acute exacerbations lead to increased hospitalisation and constitute the most important direct health care costs associated with COPD. In view of lack of clear diagnostic biomarkers which may be helpful in diagnosis of acute exacerbation of chronic obstructive pulmonary disease (AECOPD), this observational and longitudinal study was planned to evaluate serum C reactive protein and procalcitonin levels in acute and stable phases of COPD.

**Methodology:** 103 COPD patients diagnosed as per GOLD guidelines admitted in acute exacerbation were included in the study. Severity of breathlessness (MMRC grade), serum levels of CRP and PCT levels were measured at the time of admission and at discharge.

**Results:** The serum levels of CRP and PCT were significantly higher during exacerbation of COPD as compared to discharge and follow up. Besides these markers, TLC and sputum culture were done in all admitted patients. It was observed that patients with sputum culture had significantly higher CRP (p value  $<0.001$ ), PCT levels (p value  $=0.001$ ) and also TLC (p value  $=<0.001$ ). There was significant correlation between CRP and TLC at

exacerbation ( $r=0.229$ ,  $p$  value  $=0.020$ ) but PCT and TLC had no significant correlation.

**Conclusion:** CRP and PCT are important markers of infection in AECOPD. Overcoming subjective variability, CRP and PCT can be promising markers for diagnosis of AECOD, guiding therapy and monitoring response to therapy and evaluation of prognosis.

## 10. Validation of New Clinical Protocols for Detection of Frailty Among Older Indians

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**Introduction:** Frailty is a geriatric syndrome with increased susceptibility to various internal and external stressors leading to hospitalization, fall and mortality. There are several clinical criteria to detect frailty developed in different institutions in the world. Two different criteria have been developed in the Department of Geriatric Medicine, All India Institute of Medical Sciences, New Delhi, which are socio-culturally compatible to Indian population. Present study is a validation study of these two scales compared to established scales.

**Objective:** The purpose of this study was to detect frailty among older adults using two different AIIMS criteria (Criteria-I & II) with Fried's criteria as the gold standard.

**Methodology:** In a cross sectional observational study carried out in the Department of Geriatric Medicine older adults (aged  $\geq 65$  years) were classified into frail and non-frail as per Fried's criteria. Subsequently they were subjected to two new criteria (Criteria-I & II) along with determination of frailty index as defined by Rockwood et al.

**Results:** 115 older patients were included in the study. By Fried's criteria; 60 were frail and 55 were non-frail. The mean age of frail group was 75.9 ( $\pm 5.1$ ) years and non-frail group was 76.3 ( $\pm 6.3$ ) years. AIIMS Criteria-I was 82% sensitive and 100% specific whereas Criteria-II was 53% sensitive and 100% specific. Frailty index by Rockwood criteria [at a cut-off of  $\geq 0.25$  or 9 or more positive responses] was 96.7% sensitive and 80% specific.

**Discussion:** Both criteria are 100% specific in identifying frail subjects, while Criteria-I was more sensitive.

**Conclusion:** Both criteria are promising and more studies are needed for further validation in larger population.

## 11. Prevalence of Hypertension and Diabetes in patients attending outpatient clinic at Haridwar

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**Introduction:** As the elderly population is on rise, so the chronic degenerative diseases among elderly are becoming more prevalent and pose life threatening complications.

**Objective:** To investigate the prevalence of hypertension and Type 2 Diabetes in elderly patients attending Geriatric clinic.

**Materials & Methods:** Elderly patients attending Geriatric clinic at Madhavendra Hospital Haridwar during the period of Jan 2015 to March 2015, were screened by team of health workers and medical officer. Measurement of blood pressure and blood sugar estimation was done. Hypertension is determined by History of HTN / JNC VII criteria and type 2 Diabetes diagnosed according to history of DM/ measurement of blood sugar estimation. (Fasting blood glucose  $>126$  mg/dl & post prandial/random  $> 160$ mg/dl).

**Results:** A total of 1223 subjects (63% males and 37% females) were screened. 39.4% elderly were living with spouse, 22% with children, whereas 17.5% elderly living alone and 21.1% were living with others (relations ashrams). 34.6% were economically independent, 48.4% dependant and 17% were partially dependant. 454 elderly were diagnosed as hypertensive (35.4%) and 284 elderly were diagnosed as diabetics (23.2%). Hypertension is more in women (35%) than in men (30%) where as diabetics is prevalent in men (23.6%) than women (22.5%).

**Discussion:** As the study was conducted in outpatient setting of a centre where only primary health care is provided, prevalence of hypertension and T2 DM are not in tandem with NSSO reports. Still the present study has shown that the prevalence of HTN and T2 DM is high.

**Conclusion:** Hypertension and Diabetes are two major risk factors of cardiovascular diseases in elderly. Early detection and proper management of them is the prime preventive step for community welfare.

## 12. Cardiovascular co-morbidities in older patients with COPD

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**Introduction:** Chronic obstructive pulmonary disease (COPD) is a leading cause of morbidity and mortality in older adults. It is usually accompanied by other morbidities: hypertension, CAD, osteoporosis, GERD, depression, etc. Cardiovascular diseases are the most frequent comorbidity in COPD and often overlooked because of common clinical manifestations.

**Objectives:** To assess cardiovascular comorbidities in older patients with COPD.

**Methodology:** This was a cross-sectional observational study of 150 patients of COPD, diagnosed as per New Gold Guidelines, conducted over 2 years, in a dedicated Geriatric Medicine service. For evaluation of different cardiovascular comorbidities, clinical evaluation and Comprehensive Geriatric Assessment, ECG, chest x-ray and ECHO were carried out, Boston criteria was used for diagnosis of heart failure.

**Results:** Out of 150 patients (mean age 65 years) with COPD, 81% were ex-smokers and 15% were current smokers. On basis of New Gold Guidelines classification, 19.3% were classified as group A, 20% as group B, 16.4% as group C, 44% in group D. Different cardiovascular comorbidities included: heart failure in 17% patients, cor pulmonale in 12% patients, and hypertension in 40.7% patients and CAD in 9.7% of patients.

**Discussion:** Majority of patients were in group D that is with greater severity of airflow limitation and were more symptomatic. All cardiovascular comorbidities were more common in males. Hypertension was the most prevalent comorbidity.

**Conclusion:** Cardiovascular comorbidities are common in patients with COPD and should be considered, while formulating management plan.

## 13. Retrospective Study of Patients presenting to a Tertiary Care Geriatric Medicine Department with syncope

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**Introduction:** Elderly presenting with episodes of syncope pose a significant challenge to

the geriatric physician as it can be due to myriad causes and can lead to significant morbidity.

**Objective:** To identify the causative factors and associated comorbidities for syncope. To identify the investigation modalities, which aided in making the diagnosis.

**Methodology:** Patients who presented from April 2010 to March 2015 with syncope were identified from electronic medical records. Case records were reviewed to identify the demographics, causative factors, associated comorbidities, investigations aiding in the diagnosis and recommended management.

**Results:** 118 cases presented with syncope. The most common etiology was neurocardiogenic syncope (71%) followed by major AV conduction abnormalities (12%), situational syncope (6.7%), seizures (8.5%) and orthostatic hypotension (1.7%).

ECG abnormalities were seen in 47%. HOLTER was done in 86 patients and 20% had significant abnormalities. Of the 24 patients who underwent HUTT, 66.6% were positive. Among the 118 patients 85% had hypertension, 72% had diabetes and 8.2% had CVA. Permanent pacing was performed in 9 cases.

**Discussion:** The etiologies identified were neurocardiogenic syncope, AV conduction abnormalities, situational syncope, seizures and orthostatic hypotension. HOLTER, HUTT and ECG showed abnormalities in the majority of cases. Hypertension and diabetes were seen in more than 50% of cases.

**Conclusion:** Neurocardiogenic syncope was the commonest cause for unconscious collapse. ECG, HOLTER and HUTT were the most useful investigations for making the diagnosis.

## 14. Profile of Mild Cognitive Impairment (MCI) in a Memory Clinic

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**Introduction:** MCI is a poorly defined entity despite being the only stage of Alzheimer's disease, where potential intervention can be possible. MCI has been the focus of many interventions. Primarily a clinical diagnosis, controversies remain over the best scales for assessment and biomarkers for diagnostic evaluation.

**Objectives:** We evaluated the clinical and biochemical profile of MCI subjects as well as estimating the prevalence of MCI subtypes.

Different scales were compared and levels of different biomarkers were also measured.

**Methods:** Patients attending the Memory Clinic of the Geriatric Medicine with subjective memory complaints were evaluated clinically and scales for assessment of cognitive status such as HMSE/MMSE, Montreal Cognitive Assessment and CDR (gold standard). Serum samples were collected and stored at -70°C for assessment of Adiponectin and Leptine.

**Results:** 200 patients were evaluated during the study period of whom 84 (42%) had MCI according to the Modified Petersen criteria. Prevalence of the Amnestic type was 66 % and that of the non-amnestic type was 34%. Significant association was seen between presence of MCI and lower educational status and socioeconomic status and presence of diabetes mellitus, COPD, CAD and CVD. HMSE/MMSE and MoCA were comparable to CDR in terms of both sensitivity and specificity. Serum Adiponectin levels were significantly reduced in patients with MCI compared to non MCI.

**Discussion:** MCI is an increasingly identifiable stage especially in the urban settings in India. Prevalence of the Amnestic type of MCI was found to be higher. Adiponectin levels were reduced.

**Conclusion:** It is necessary to have repeated assessments to conclusively establish presence of MCI and its progression. More studies are required for better clinical definition of MCI and the role of biochemical and clinical criteria for defining MCI.

### 15. Urinary Incontinence in elderly: Prevalence & Impact on Quality of life

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**Introduction:** Urinary incontinence is a common health problem in old age. Little research has been carried on this genito-urinary health issue in India as the symptom goes often under-reported. Urinary incontinence is associated with significant impact on the individual, their careers and the wider healthcare system.

**Objectives:** This single centre study was carried out to: 1) screen for urinary incontinence among health-care seeking older patients in a dedicated service of a tertiary care hospital; 2) assess the type and severity of urinary incontinence among older patients; and 3) assess the impact of urinary incontinence on quality of life.

**Methodology:** In this cross sectional observational study, 200 patients were recruited from Geriatric Medicine OPD and Ward. They were subjected to a pre-designed semi quantitative questionnaire to determine the frequency of urinary incontinence in older people and its impact on various aspects of their life using of symptom specific as well as generic instruments.

**Results:** Stress incontinence was most common in females and urge incontinence was common in males. Certain patients also had mixed incontinence. There was significant impact on quality of life due to incontinence.

**Discussion:** Urinary incontinence detection is essential, as it can lead to increased dependence. It can be treated with appropriate interventions varying from exercises, modifying medications, altering fluid intake and interdepartmental interventions. The interventions vary according to the type.

**Conclusion:** Urinary incontinence is an important geriatric syndrome. Training and education of the patient and caregiver is imperative. Early detection and intervention can help in improving quality of life of the elderly.

### 16. Evaluation of Foxo3a Protein in Serum as A Marker of Ageing

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**Introduction:** Ageing process is characterized by a decline in function, different age related diseases and excessive age specific mortality. There has always been a quest for easily accessible biomarkers to monitor and identify the development of age-associated disease for providing new anti-ageing strategies. FOXO3a, belonging to FOXO transcription factor family is one such potential marker which plays an important role in a wide variety of cellular mechanisms and has been proposed to be an ideal candidate to study longevity.

**Objectives:** In this study we quantified FOXO3a protein in serum for the first time and quantify its concentration with increasing age.

**Methodology:** Four hundred forty two subjects were enrolled for the study according to inclusion and exclusion criteria. They were divided into 5 groups according to increasing age (20-30, 30-59, 60-69, 70-79, 80 years and above. Serum levels of FOXO3a protein was estimated by Surface

Plasmon Resonance and Western blot techniques. The statistical analysis was done with student's unpaired t-test and one way anova by stata9 and graph pad prism6.

**Results:** Serum FOXO3a levels (mean + SD) in different age groups were as following: 20-29 years  $-2.309 \pm 0.59$  ng/ $\mu$ L; 30-59 years  $-1.96 \pm 0.24$  ng/ $\mu$ L; 60-69 years  $-1.83 \pm 0.56$  ng/ $\mu$ L; 70-79 years  $-1.81 \pm 0.60$  ng/ $\mu$ L; and  $> 80$  years  $-1.77 \pm 0.49$  ng/ $\mu$ . The serum concentration of FOXO3a declined steadily and significantly ( $p < 0.0001$ ) with increasing age.

**Discussion:** This is the first report of inverse relation of age and human serum FOXO3a in published literature.

**Conclusion:** This study provides a stepping stone for more research in the FOXO3a protein pathway and its relation with longevity.

## 17. Cardiovascular outcome in geriatric diabetic population in relation to hSCRp

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**Introduction:** Diabetes mellitus is a group of diseases characterized by either insufficient production of insulin or by its failure to act on the target tissues resulting in hyperglycemia. Compared with non-diabetic individuals, patients with diabetes have a twofold to fourfold increased risk for development and dying of CHD. Diabetes associates independently with a twofold to fivefold increased risk of heart failure (HF) compared with those without diabetes, comprising both systolic and diastolic HF.

**Objectives:** The goal of this study was to ascertain the prevalence of cardiovascular events in diabetic geriatric patients in relation to hsCRP level in attending outpatient department of a tertiary care teaching hospital in North India.

**Material and Methods:** Total 175 subjects were analysed. They were divided into two groups depending on the level of hsCRP level. Group A (hsCRP  $< 3$ mg/l) and group B (hsCRP  $\geq 3$ mg/l). Group A comprised of 90 patients and were subdivided into males (A1, N=52) and females (A2, N=48). Similarly group B (N=85) was subdivided into B1(N=44) and B2 (N=41) comprised of males and females respectively.

**Results:** The prevalence of adverse cardiovascular events in form of hypertension, ischemic heart disease heart failure etc. (26.6 %) was observed to be lower in group A than group B (45.3%)  $p < 0.05$ . In the subgroup analysis males A1 (30.7%) & B1 (46%) had more adverse cardiac events followed by female A2 (25.2%) and B2 (42.8%) with significant statistical difference ( $p < 0.05$ )

**Conclusion:** hsCRP level is a good indicator for predicting cardiovascular outcome and can be utilized for prevention of adverse cardiovascular events in geriatric population with diabetes mellitus.

## 18. Impact of diabetes and its complications on mental health and quality of life in older people

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**Introduction:** Diabetes increases the risk of mental illness. Even though there are many studies on prevalence of depression, anxiety and cognitive dysfunction in diabetics, yet studies on prevalence in elderly diabetic are lacking. Diabetes with all its complications has important bearing on health and well being in old age. In the current study an effort is made to elucidate the behavioral problems of older diabetics and quality of life.

**Objectives:** To study the frequency of various mental health disorders in older patients with long standing diabetes and to study its impact on quality of life.

**Methodology:** In a cross-sectional observational study older diabetes patients were assessed by Geriatric Depression Scale (GDS), Montreal Cognitive Assessment (MoCA), Mini International Neuropsychiatric Interview (M.I.N.I.) and WHO-Quality of Life (WHO QOL) for depression, cognitive dysfunction, anxiety disorder and quality of life assessment respectively and comparison was made between non-diabetic controls.

**Results:** Prevalence of depression, cognitive dysfunction and anxiety in diabetic elderly was 30%, 50% and 14% respectively as compared to non-diabetic control which was 14%, 30% and 10% respectively ( $p$ -value  $< 0.005$  for all). The scores in physical, psychological, social and environmental domains of WHOQOL in diabetics were 59, 68, 71 and 70 respectively; compared to 64 ( $p = 0.002$ ), 74 ( $p = 0.003$ ), 71 ( $p = 0.76$ ) and 74 ( $p = 0.58$ ) in non-diabetic controls respectively.

**Discussion:** Patients with diabetes are more likely to have depression, cognitive dysfunction, anxiety and poor quality of life compared to non-diabetic controls.

**Conclusion:** Diabetes is a risk factor for poor mental health and all diabetic elderly people must be assessed for these conditions.

## 19. Prophylactic use of Antimicrobials in Geriatric Patients with TKR/THR

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**Introduction:** The rapid and persistent increase in the elderly population will affect the use and costs of health care significantly. Approximately 68% of total hip arthroplasties (THA) and 74% of total knee arthroplasties (TKA) are performed on people over age 65. Surgical Site Infections remain a challenging and potentially devastating complication of THA and TKA surgery. This study is an attempt to understand Prophylactic use of antimicrobials in geriatric patients with TKR/THR.

**Methodology:** A total of 928 Patients' data was collected retrospectively from a private tertiary care hospital from five different clinical locations over a period of one year of study. Demographic details and practice of prescription of antibiotics as preoperative and postoperative surgical prophylaxis for 259 geriatric patients were observed.

**Results:** The results are based on data obtained from 928 geriatric patients. It was found that 27.9% (259/928) geriatric patients' had undergone TKR/THR surgery. Practice for prescription of Cefuroxime and Amikacin/ Tobramycin as preoperative surgical prophylaxis for both TKR/THR was found in geriatric patients. In appropriateness with respect to timing of administration of preoperative surgical prophylaxis was found in 68.9% cases. Post operative surgical prophylaxis was found to be continued even after 72 hours of surgery in 96.4% TKR cases.

**Conclusion:** Prolonged use of antimicrobials is not only an expensive affair and a leading cause of antimicrobial resistance but also a special concern in geriatric population who are already on multiple drugs. Such type of research would be one of the steps towards safe use of drugs in this special age group.

## 20. Nutritional Status of Elderly Patients Visiting The Geriatric Clinic- A Hospital Based Study from A Tertiary Care Centre in North India

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**Introduction:** Malnutrition is a major concern among the elderly population. The Mini-Nutritional Assessment is a validated scale for determining elderly malnutrition.

**Objectives:** To determine the prevalence of malnutrition among elderly patients visiting the geriatric out-patient services and analyze various attributes.

**Methodology:** 225 elderly ( $\geq 60$  yrs) randomly selected patients (M = 154, mean age  $67.42 \pm 13.82$  yrs; F = 71, mean age  $64.69 \pm 10.51$  yrs) were assessed using the MNA questionnaire. Information regarding chronic illnesses for 145 patients (M = 97, F = 48) was entered into a pre-designed case report form. The data was analyzed using SPSS ver 16.0.

**Results:** Mean BMI was  $22.58 \pm 8.55$  kg/m<sup>2</sup> (M) and  $23.76 \pm 10.79$  kg/m<sup>2</sup> (F) ( $p=0.084$ ). 180 patients scored  $\leq 11$  points on screening test and full assessment was completed on them only. Among the 180 patients (M = 117, F = 63), 73 were classified as malnourished ( $< 17$  total score) and 107 were at risk of malnutrition (17-23.5 total score). 36% males undergoing full assessment were malnourished as compared to 49% females ( $p=0.083$ ). 92.8% patients were taking  $> 3$  prescription drugs daily. 68% patients were unaware of their weight loss patterns. Whereas fruit/ vegetable consumption was adequate among most (84%) patients, 83% had intermediate protein consumption and as many as 71% had inadequate fluid intake. 50 out of 145 evaluated patients had at least 2 chronic co-morbidities. Hypertension was the commonest co-morbidity (40.7%) followed by T2DM (23.4%).

**Discussion:** A high prevalence of malnutrition in the Indian elderly visiting hospitals is demonstrated. The average BMI is found to be in the normal range. Prescription drug use was quite common in the elderly. Whereas fruit/ vegetable consumption was adequate, fluid intake fell short.

**Conclusion:** The study highlights important aspects of elderly nutrition in north India.

## 21. Community Acquired Pneumonia in Elderly: Etiology and Outcome

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**Introduction:** The elderly account for a large number of pneumonia patients in hospital with longer stay, more severe disease, greater need for intensive care and high risk of complication and death.

**Objective:** The aim of this study was to study the microbiological profile of pneumonia with a special emphasis on viral pneumonia and atypical pneumonia and to identify predictors of death and poor outcome.

**Methodology:** 200 patients aged 65 years and above diagnosed with CAP were recruited and followed up till discharge or death. Microbiological investigations included sputum/tracheal aspirate gram stain, culture and sensitivity, blood culture and throat swab for *Mycoplasma*, viral PCR and serum for *Mycoplasma* and *Legionella* IgM/IgG. Patients were treated with standard treatment protocol of the hospital with individual interventions as and when required.

**Results and Discussion:** The microbiological isolations included: *Pseudomonas aeruginosa*, *Escherichia coli* and *Haemophilus influenzae* from blood culture; and *Escherichia coli*, *Acinetobacter*, *Klebsiella pneumoniae* & *Pseudomonas aeruginosa* from sputum culture (5%) *Mycoplasma pneumoniae* was isolated in 3% of respiratory samples cultures; while PCR positivity of *Mycoplasma pneumoniae* in 5% of respiratory samples. IgM antibodies against *Legionella* were detected in 6% of sera while PCR of throat swab revealed positivity in 18% samples. Para-influenza-virus-3, influenza-A, hRV were the common viral isolates. 131 patients survived whereas 69 succumbed to death. Increasing age & blood urea & low total serum proteins were important predictors of death along with infections with *Haemophilus influenzae*, *Acinetobacter* or Para-influenza-virus-3, higher CURB-65 & PSI score.

**Conclusions:** This is possibly the first study of its kind associating outcome with viral & atypical pneumonia along with CURB-65 and PSI score.

## 22. Role of Serum Heparin Level in Differentiating Iron Deficiency Anaemia & Anaemia of Chronic Disease in Elderly

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**Introduction:** Anemia is a major problem in older adults. Distinguishing ACD from IDA can be difficult on the basis of routine blood parameters i.e serum iron, TIBC, ferritin levels. Bone marrow examination (BME) remains the gold standard, however, it is invasive, expensive and requires technical expertise, therefore, it cannot be performed routinely in clinical practice. Serum Heparin level can improve this differentiation and can overcome the limitations of BME.

**Objective:** To demonstrate the role of heparin in differentiating IDA from ACD.

**Methodology:** A study was carried out taking 80 elderly participants (32 ACD, 32 IDA, 16 Controls). Routine assessment of anaemia and bone marrow examination as gold standard was done to differentiate IDA from ACD. Serum heparin level was determined by Competitive ELISA 96-Well plates (My Biosource™ flat bottomed), the current method of choice for its quantification. Statistical analysis was done using spss software version 16.0.

**Results:** Mean serum heparin level in Control was 99.62121ng/ml, in ACD 174.2519 and in IDA were 87.21591. p value was 0.010959.

**Discussion:** Participants with IDA had statistically lower plasma heparin level and significantly higher heparin levels were found in ACD. Thus heparin levels can help to discriminate between classic iron-deficiency anemia (low heparin levels) and iron deficiency in the context of anemia of inflammation (high heparin levels). Heparin levels could then be used to predict the therapeutic response to iron administration. Future studies should also establish whether heparin antagonists, e.g. anti-interleukin-6 receptor antibodies and heparin-neutralizing agents, or targets against the heparin binding site of ferroportin, have potential value in the treatment of ACD in older people.

**Conclusion:** Heparin level is a reliable marker to differentiate IDA from ACD.

## 23. Assessment of Palliative Care Needs in Older Cancer Patients

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**Introduction:** Cancer is a disease of old age with 11-fold increase in incidence and 16-fold increase in mortality after 65 years. Over 1 million new cases of cancer occur each year in India with over 80% presenting at stage III and IV and ineligible for any form of curative treatment. Palliative care

is the best and least management option in such cases.

**Objectives:** The objective of this study was to assess the palliative needs in older cancer patients by using interRAI-Palliative Care instrument and compare with standard CGA tools.

**Methodology:** In a cross sectional observational study, 230 older patients with a tissue diagnosis of cancer were subjected to a detailed evaluation of palliative care needs using interRAI Palliative Care questionnaire: They were also subjected to assessment by various validated scales of geriatric assessment: ADL, IADL and GDS. Palliative care need assessment was carried out with interRAI-Palliative Care and related Karnofsky Performance Scale. Various subsets of interRAI scales were validated with standard CGA tools.

**Results:** Two thirds of patients were male with mean age of 67 ( $\pm 5.6$ ) years (range: 60-75). 59% of all cases were diagnosed in stage IV. Pain (77%) was the most common complaint followed by constipation (74.5%) and sleep disturbances (70%). Both ADL and IADL were impaired in 38%. 46% were referred to palliative care unit. Further statistical analysis is being done for validity of interRAI tool with standard CGA tools.

**Discussion:** Clinicians need to familiarize themselves with management of non-cancer symptoms while trying to address the primary disease.

**Conclusion:** Older patients with cancer need palliative care which can be detected with simple CGA tools validated against interRAI-Palliative care.

#### 24. Approach towards the Geriatric Population by the Family Members Based on Socio Economic Status; A Questionnaire Based Study

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**Introduction:** Aging is a natural process. In the words of Seneca. 'Old age is an incurable disease'; Sir James sterling commented 'you do not heal old age, you protect it; you promote it; you extend it'. Old age should be regarded as a normal inevitable biological phenomenon. Discoveries in medical science and improved social condition during past few decades have increased the life span of human. The geriatric population are facing so many problems as the result of the physiological aging. The approach towards them varies according

the changes and the family member's mood behaviour. This study was planned to bring out the family member behaviour towards them as there was no clear study to explain that till now.

**Objectives:** To assess the magnitude of domestic abuse among geriatric population the morbidity profile and the domestic support received by geriatric population during illness the factors influencing the domestic abuse in the study population

**Methodology:** The study was a hospital based cross sectional study.

Study period	: June 2015 to August 2015
Sample size	: 2950
Sample selection	: convenient sampling
Study population	: eligible geriatric population (>60 yrs) attending our OPD

With the consent from Institutional ethics committee, department members, participating group and their family members the geriatric population attending our hospital was chosen.

**Results and interpretation:** The discrepancies and pitfalls were evaluated. Appropriate statistical methods were used to interpret the results. About 47% of the elderly were abused and their family members were explained about the results for improvement of their approach to the geriatric community.

#### 25. Evolving a City Based Model for Home Care Nursing For Elderly: Feedback on Formative Research Efforts by Nine, PGIMER, Chandigarh

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**Introduction:** Inability to perform daily life activities and various health problems make elderly dependent. It generates a need for home based nursing care which is presently not available to masses in India even in 21<sup>st</sup> century. There is a growing need to fill this gap to enhance the quality of life of elderly.

**Objective:** To estimate the nursing care needs of elderly in Chandigarh.

**Methodology:** This cross sectional study was carried out on 1080 elderly of Chandigarh. Using stratified multistage random sampling technique, 90 elderly were selected each from three sectors, villages, slums and NAC Manimajra of Chandigarh.

Information was gathered regarding socio demographic profile of elderly and their caregivers; level of dependence using Katz Index of ADL and Lawton and Brody's IADL; level of depression using GDS; degree of mental impairment using MMSE. A modified Royal College of Nursing Toolkit was used to assess their nursing care needs.

**Results:** Mean age was 67.22  $\pm$  7.54 years; 51.3% were males. Half had some source of income. As per Katz index, only 0.5% were fully dependent and 29.7% were partially dependent for activities of daily life. Maximum were dependent for food preparation (57.5%), housekeeping (57%) and laundry (58%). MMSE score indicated marked impairment among 16%. Few (2.10%) elderly were severely depressed. Most of the care was provided by family. As per RCN toolkit, only 2.4% elderly required actual nursing care i.e. an intervention to be conducted by a registered nurse. Mean RCN score was 45.13 indicating that net 2.5 registered nurse hours per 24 hours are required for providing care to each elderly.

**Conclusion:** Two ICMR projects have been completed at NINE, PGIMER, Chandigarh on home based bedsores care and assessment of nursing care needs of elderly. Work on Assistive Elderly Devices (AEDs) has also been initiated. Six theses on related topics have also been completed. Concept of care by professional nurse at home is missing in Chandigarh. Actual nursing care was required among 2.4% elderly.

**Recommendation:** There is a need to evolve a city based home nursing services for Chandigarh. Caregivers of elderly need to be trained.

## 26. A Prospective Observational Study of Adverse Drug Reactions in Patients Presenting to The Geriatric Clinic of A Tertiary Hospital in North India

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**Introduction:** Adverse drug reactions (ADRs) form one of the leading causes of morbidity and mortality particularly in the elderly population. Altered pharmacokinetics and pharmacodynamics with increasing age exposes the geriatric population to ADRs.

**Objective:** The primary objective of this study was to find the occurrence of ADRs in north Indian elderly population coming to the Geriatric

OPD and its distribution with respect to age, sex and severity.

**Methodology:** Elderly patients coming to Geriatric OPD were enrolled in this hospital based, prospective observational study done during the period of Feb2015-Sept2015 based on self-reporting or physician diagnosis.

**Results:** Out of 650 patients coming to geriatric OPD, 68 ADRs were reported in 55 patients (10.4%). 8 patients experienced more than one ADRs (4.5%). 33 (60%) patients were males while 22 patients (40%) were females. Polypharmacy was seen in 100% patients. 41% ADRs were serious and hospitalization was required in 23.5% ADRs. 3 cases of deaths were reported (4.4%). Causal association was 'probable' in 60.29% ADRs. Amitriptyline and torsemide were the most common culprit drugs (7.35% each). Most commonly reported ADR was hyponatremia (8.8%) followed by headache and hyperuricemia (5.88% each). Two cases of drug withdrawal reaction (2.9%) and two cases of drug toxicity (2.9%) were seen.

**Discussion:** A higher than described incidence of ADRs was seen in our study. Polypharmacy was an universal association. Drugs acting on the cardiovascular and nervous systems were the commonest culprits.

**Conclusion:** The study highlights the incidence, severity and type of ADRs in elderly population and gives platform for large scale studies in future.

## 27. Evaluation of Nutritional Status in Elderly Patients

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**Introduction:** Elderly persons often develop malnutrition that can be attributed to a combination of physiological, pathological, psychological and social causes. In the elderly, malnutrition causes or worsens a state of frailty and/or dependency and contributes to the development of morbidities. Malnutrition is often overseen and not considered when a treatment program for the elderly patient is planned.

**Objectives:** 1. To evaluate the prevalence of malnutrition among elderly patients attending the Out-patient department of the Department of Geriatric Medicine at Rajiv Gandhi Government General Hospital. 2. To assess the nutritional

status using the Mini Nutritional Assessment (MNA) questionnaire which is an eighteen-item nutritional screening instrument used in the elderly. 3. To determine the awareness of importance of nutrition in the study group.

**Methodology:** Cross-sectional study to assess the nutritional status of 1000 elderly patients, both male and female, aged 65 years and above attending the Geriatric Medicine Out-Patient Department. The subjects were interviewed using the Mini Nutritional Assessment Questionnaire and if the screening form identified a person as being at risk of malnutrition, the assessment section was completed. The results were tabulated. Data analyses were performed using a statistical software package. Significant differences between groups were determined with the Chi Square t test and the Student t test. Homogeneity was compared using Spearman's rank correlation coefficients.

**Results:** According to the Mini Nutritional Assessment (MNA) score, the prevalence of malnutrition in elderly patients was 31.3%, those at risk of malnutrition were 54.8% and those normally nourished were 13.9%. The mean MNA-SF (screening) score was  $8.7 \pm 2.3$  (range = 2-14) and the mean Total Assessment score was  $17.8 \pm 3.3$  (range = 6-26). Average anthropometric values were BMI  $\rightarrow 23.1 \pm 4.4$  kg/m, Mid-arm circumference  $\rightarrow 24.2 \pm 3.0$  cm and Calf circumference  $\rightarrow 31.5 \pm 3.7$  cm. The correlations between the total MNA score and the anthropometric variables - BMI ( $r=0.438$ ,  $p<0.001$ ), Mid-arm circumference ( $r=0.388$ ,  $p<0.001$ ) and Calf circumference ( $r=0.408$ ,  $p<0.001$ ) were all significant. The results of the study also showed that older age and being a woman were associated with lower MNA scores.

**Conclusion:** The prevalence of malnutrition is significantly high in the elderly attending the Geriatric Out-patient Department. More than half of the study population is at risk of malnutrition and immediate steps have to be taken to revive their normal health status. More importance should be attached to the female population who are at higher risk relatively. The focus should be to evaluate the nutritional status of the elderly at their very first approach to medical help (besides surveillance of the free living) to improve their ability to overcome disease and enhance their clinical outcome. Mini Nutritional Assessment (MNA) is a simple, rapid and reliable tool to evaluate the nutritional status of elderly patients, to recognize those at risk of nutritional problems. Nutritional Assessment in Geriatrics is a means of early detection, early intervention, and improved results, for the better care of the elderly.

## 28. Heart Failure affects Quality of life in Old Age

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**Introduction:** Heart failure (HF) is a common health problem with very little data available from India. Its prevalence follows an exponential pattern, rising with age, and may affect up to 10% of population over the age of 65 years.

**Objectives:** The objective of this study was to assess the clinical profile of HF in older patient and to study its associations and impact on functional status and quality of life in old age.

**Methodology:** In a cross-sectional case-control study, conducted in the Department of Geriatric Medicine, 220 patients with clinical and radiological features of HF (Boston criteria) and equal number of age and sex matched controls (patients without HF) were evaluated. They were subjected to detailed clinical examination, chest X-Ray and echocardiography along with comprehensive geriatric assessment and assessment of quality of life by Minnesota heart failure questionnaire (MLHFQ). They were managed as per standard treatment protocol for HF.

**Results:** 94% of patients with HF were below 80 years of age. 80% were smokers. Dyspnoea at rest (75%) and orthopnoea (58%) were common symptoms. Urinary incontinence (50%) and polypharmacy (42.5%) were the common accompanying geriatric syndromes. ADL was impaired in 80% and IADL was impaired in 100% of patients while 75% were depressed and all of them had poor quality of life. Advanced age, low BMI, presence of multimorbidity and geriatric syndromes, impaired ADL and IADL; and low ejection fraction in ECHO were associated with poor quality of life.

**Discussion:** Patients with HF have global affection of health status with severe affection of functionality of quality of life.

**Conclusion:** Presence of HF has profound negative impact in the quality of life in old age.

## 29. To Study the Profile of Clinically Probable Dementia with Lewy Bodies and their Clinical Response to Cholinesterase Inhibitors

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**Introduction:** With a rapidly ageing population there is steep increase in dementia

patients. Dementia is a progressive illness and has a lot of caregiver burden. Dementia with lewy bodies is distinct in the form that it can be clinically recognised with fluctuating sensorium, visual hallucinations and features of bilateral parkinsonism. This dementia shows a good response to cholinesterase inhibitors and the quality of life of the patient and the caregiver can be substantially improved. Unfortunately still there is a long lag period between the onset of symptoms and clinical diagnosis. We are here presenting 11 such patients who were clinically diagnosed as probable dementia with lewy bodies based on the consensus criteria and were treated with cholinesterase inhibitors (Donepezil).

**Objectives:** 1. To study the profile of clinically probable dementia with lewy bodies; 2. To study the caregiver burden in these patients; 3. To study the response to donepezil in these patients in the form of improvement in MMSE and reduction in caregiver burden

**Methodology:** It is a cross sectional study in the patients who reported to the medical OPD with clinical features suggestive of dementia with lewy bodies between June 2013 to June 2015. Patients were diagnosed based on the consensus criteria for clinical diagnosis of probable or possible diffuse lewy body dementia. Base line characteristics and caregiver burden index were assessed. All the patients were given donepezil and the response was assessed at 12 weeks. All patients underwent CT Brain and screening for reversible causes of dementia including Vit B12 assays and thyroid functions,

**Results:** Total 11 patients were clinically diagnosed as a case of dementia with lewy bodies. Five were females and 6 were males. Average age was 79.90 years. Total 6 patients were between 70 years to 80 years and 4 patients were above 80 years of age. The lag period between onset of symptoms and diagnosis of probable lewy body dementia was 3.1 years. Average MMSE of the patients was 15.81 at presentation. Post cholinesterase inhibitors the average MMSE improved to 21.18 at 12 weeks. Two out of eleven patients showed MMSE improvement of <2. There was a significant reduction in the caregiver burden after starting the patients on cholinesterase inhibitors with reduction in Zarit Burden index from 63.18 to 53.27. Clock draw test also showed a significant improvement with improvement in score from 0.63 to 2.45 after treatment.

**Discussion:** Dementia with lewy bodies is a common but under recognised condition in the elderly population with dementia. The symptoms

can be effectively controlled with anticholinesterase inhibitors thus improving the quality of life and reducing the caregiver burden. Patients can be accurately diagnosed using a clinical criteria and can be started on cholinesterase inhibitors.

**Conclusion:** Lewy body dementia can be diagnosed with consensus criteria for clinically probable and possible dementia with lewy bodies. Most of these patients showed a good response to cholinesterase inhibitors.

### 30. Clinical spectrum and Co-morbid Conditions among Elderly Rheumatoid Arthritis patients

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**Introduction:** With demographic change prevalence and incidence of different forms of inflammatory arthritis are increasing in the elderly persons. Rheumatoid arthritis (RA), commonly seen in younger subjects, poses a unique challenge to treating clinicians when seen in the geriatric population.

**Objectives:** To determine the demographic characteristics, clinical symptoms, associated comorbidities, extra-articular manifestation in older patients with Rheumatoid Arthritis visiting hospital.

**Methodology:** Rheumatoid Arthritis patients of both sexes and all ages, fulfilling the ACR criteria 1987, were recruited in the study from Mahatma Gandhi Hospital, Jodhpur. Written informed consent was obtained from the patients. Demographic characteristics, base line co-morbidity and extra-articular manifestations were recorded. Anthropological parameters height and weight were taken to calculate BMI. Data analyses were performed using a statistical software package. Patients were divided into 2 groups younger (18-59) and older age (60-83) years.

**Results:** Among total of 80 patients 17 (21.3%) were male and 63 (78.7%) were females. 12.5% patients were 60 years and above; female to male ratio being 4:1. Mean ages of younger and older patients were 45.14±9.0 and 65.2 ±7.8 years, respectively at the time recruitment. Family history of disease was observed in 20%, either 1 or 2 degree relatives of the patients. The tobacco chewing and smoking was observed in 27.5% of patients. Mean

age of the disease onset was  $34.4 \pm 9.2$  years in patients aged less than 60, and  $49 \pm 7.1$  years in elderly patients. Mean morning stiffness duration was 51.7 minutes in younger patients while in elderly patients, it was 63.5 minutes. The duration of Joint pain, swelling, muscular pain and back ache in terms of weeks was higher in elderly patients than younger patients. The presence of nodules was higher in elderly patients (30%) as compared to 24.3% in younger patients. The difficulty in daily activities was observed in 35% of the patients which was higher in elderly patients (70%) than younger patients (30%). Hypertension (13.8%) and Thyroid disorders (7.5%) were the most common co-morbidities.

**Conclusion:** Effect of age and co morbidities modify the clinical features of Rheumatoid Arthritis. The management of rheumatoid arthritis in the elderly should be individualized, especially considering comorbidities and other factors that can specifically affect a patient's quality of life. Coordination of care among geriatricians and rheumatologists is the key to achieving optimal outcome.

### 31. Opium Addiction and its Impact on Emotional Wellbeing of Rural Elderly in Jodhpur, Rajasthan

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**Introduction:** Substance abuse affects the physical, social, and emotional well-being. Western Rajasthan is known for high number of opium addicts in rural areas. Due to insufficient knowledge and limited research data about opium use among older adults this situation remains underestimated and under identified. Older persons living in rural areas have number of significant disadvantages compared to their urban counterparts as they struggle with lower incomes, higher unemployment rates, higher poverty and literacy rates and less available health resources; in addition to this, opium addiction make them more vulnerable. This study attempts to find out the socio demographic characteristics of the opium use and its effect on emotional health of rural elderly aged 60 and above.

**Methods:** A cross-sectional study was done among elderly in a village of Jodhpur district. A predesigned and pretested questionnaire was used and house to house survey was done. Data was entered in MS Excel and analyzed using SPSS.

**Results:** A total of 331 ( $\geq 60$  yrs) elderly were interviewed. The Mean age was 68.9 yrs. The mean age of males was 68.95 yrs and females were 66.79. Majority of respondents were married (74%) and lived with their families (76%). Among men the opium addiction was 18.7% and among women the opium addiction was 1.2%. Most of the opium users (65.15%) were not engaged in any occupation. Among opium users 36.36% were financially and 39.39% were physically dependent on their family members, 43.08% were not satisfied & 64.1% were not happy with their life, 49.23% felt loneliness. 60.60% opium users had reduced social activities.

**Discussion:** Substance abuse in elderly adds significantly to special physical, social and mental health challenges faced by them. Present study highlights that most of elderly opium users have depression, social isolation and dependence worsening their emotional wellbeing. This hampers their contributions to society as family members, volunteers and as active participants in the workforce.

**Conclusion:** Training all health providers in working with issues related to ageing and substance abuse is therefore important. Effective, community-level primary mental health care and de-addiction services for older people especially in rural setting are crucial.

### 32. Study of Morbidity and Mortality Profile in an Elderly Population of Urban Area of Jodhpur, Rajasthan

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**Introduction:** With ageing of the population our country is facing a heavy double burden of infectious and non-communicable diseases. Assessment of mortality and morbidity profile pattern of geriatric population is essential to plan appropriate intervention strategies for their health care needs.

**Objective:** To find out mortality and morbidity profile pattern of geriatric population in urban area (Jodhpur).

**Methodology:** This is a follow-up study of WHO-SAGE Physical Activity Validation (2010) assessing physical activity in older adults. House to house survey of 249 individuals ageing 50-90 was carried out along with interview and examination, over a period of April- October 2010 in urban area of Jodhpur city, Rajasthan. Survey questionnaire was derived from the SAGE survey instrument which includes household and respondent information, health state descriptions and functioning,

health measurements, risk factors, chronic conditions, social cohesion and time use- summary full day DRM. These selected individuals were again contacted during July-September 2015 to find out their present health status.

**Result:** Out of 249 surveyed individuals during 2010, we could contacted only 104 individuals or their family members while remaining left/sold their house/ refused. Among 104 individuals 31.7% were males and 68.3% were females. The mean age recorded was  $60.2 \pm 8.3$  yrs while in males ( $62.5 \pm 6.2$  yrs) and females ( $59.2 \pm 9.1$  yrs). The morbidity profile was observed in which hypertension (42.3%) cataract (37.5%), edentulism (26.0%) asthma (19.2%), diabetes (19.2%), angina (10.6%), arthritis (6.7%), COPD (4.8%), stroke (4.8%), depression (2.9%) were present. A significantly higher proportion of women suffered from asthma, diabetes and stroke as compared to men whereas angina, cataract and COPD were higher in men as compared to women. During this period, 12 individuals died (11.53%) out of which 15.1% were males and 9.8% were females. Their morbidity profile was hypertension (75%), cataract (50%), edentulism (41.7%), asthma (33.3%), diabetes (25%) and angina (16.2%).

**Conclusion:** There is a need to find out the burden of illness and chronic ailments causing high morbidity and mortality among the elderly so that appropriate intervention could be delivered to improve their quality of life.

### 33. A Case Series of Interesting Haematological Cases in Elderly

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**Introduction:** The incidence of certain haematological diseases increase sharply with age. Most of them are presented to different medical specialities and sometimes are picked up by routine tests done for some other purposes. We report a series of cases which are common hematological problems in elderly but with uncommon presentations and finally diagnosed by extensive evaluation in the hematology department.

**Case 1-** 68 year old male patient presented to geriatric medicine department with pedal edema, found to have SHT, elevated renal parameters and nephrotic range of proteinuria was referred to nephrology department for expert opinion. Renal biopsy was done in the course of investigation which showed light chain deposits. Routine

investigations including bone marrow aspiration were negative for myeloma. Specific hematological investigations including Immuno electrophoresis and light chain assay in serum confirmed the diagnosis; specific treatment resulted in good improvement in quality of life of patient. **Case 2-** 65 year old female presented to dermatology department with skin lesions and prolonged fever. Clinical diagnosis was erythema multiforme. Skin biopsy was s/o vasculitis and as her CBC showed severe anemia, she was referred to hematology department and further evaluation led to the diagnosis of NHL. **Case 3-** 60 year old man with h/o Type 2 diabetes presented with complaints of angina. Clinical examination revealed pallor and routine investigations showed severe anemia and thrombo-cytopenia. On further haematological evaluation, the case turned out to be myelodysplastic syndrome. **Case 4-** 65 year old female a K/C/O HBV related liver disease presented with hematemesis. CBC showed pancytopenia- a common occurrence with DCLD with hypersplenism. Her OGD scopy showed no evidence of varices. Hence further haematological investigations were carried out and BMA was s/o Hairy cell Leukemia. BM biopsy is awaited.

**Discussion:** Some of the common but serious hematological problems in elderly, their common and Uncommon presentations are discussed. Treatment modalities are also discussed in brief.

**Conclusion:** Atypical presentations and multiple pathologies are common in elderly. Sometimes, systemic symptoms and co-morbid conditions may be predominantly expressed masking important clinical signs and symptoms of other pathology. This case series serves as an example of basic hematological problem expressing itself as various systemic signs and symptoms and emphasize the need of considering these conditions as one of the differential diagnosis and pursuing further investigations in that direction to confirm or exclude the condition.

### 34. Values in Geriatric Health Care

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In many countries, governments are devising modernisation strategies to bring about major and continuing improvements in the quality of clinical care delivered to patients across their health sectors. However, for this to happen, high morale, positive attitudes and enthusiasm among health care workers ought to be present. In recent years

there has been a decline in morale in health care professionals and a feeling of not being valued. In a survey of general practitioners in the UK, two-thirds said morale was low or very low and 80 percent reported that work related stress was unmanageable. Most obvious cause of doctor's unhappiness is that they feel overworked and under supported. As practitioners we forget to be, we become human doings instead of human beings. In that process we lost most of what we enjoy about being carers.

India is in a phase of demographic transition. For, the proportion of people aged 60 plus is rising and is expected to accelerate in the next 50 years. Indian elders have high morbidity (more illnesses). Many end up with disability. An older Indian is likely to have at least 3 to 4 diagnosed illnesses. Luckily our elder patients understand that there is no cure for some diseases, but they need compassion, love, caring hand rather than medicines. Communication makes lot of difference. One of the keys to raising morale in healthcare today is to re-emphasise the importance of values in guiding practice at all levels. There are some excellent values statements produced by health care bodies in the field, but for values to be meaningful, they must be owned at a personal level, and then integrated into the workplace. By practicing values like peace, positivity, compassion, cooperation, valuing self and spirituality in health care provides foundation to address many problems in healthcare delivery system.

Peace is a natural state within all of us which helps to build self-respect and contentment. It is medicine for burnout. Positivity and optimism brings benefit not only to us, but to colleagues and patients. Compassion brings humanity to health care. It is the expression of our innate qualities of patience, generosity and kindness. It helps to tackle anger, guilt, anxiety and attachments. Cooperation is about working together successfully, as individual and teams, so that task can be enjoyable and creative. Valuing self can help to bring mutual respect and harmony into the relationships, to the benefit of doctors, their patients and colleagues. Spirituality in health care is a vital concept to provide holistic health care.

Practicing values helps to:

1. Set professional standards and codes of practice,
2. Resolve ethical issues;
3. Manage work load, and improve cooperation in team;
4. Improves the quality of relationship and communication at all levels;
5. Copes better with stress and prevent burnout feeling;
6. Improves morale in work force and reduce sickness absence.

There is a training programme called as VIHASA (values in Health care a spiritual approach) which is 3 to 4 days training programme for doctors and paramedical staff which helps to build their self esteem, positive attitude, team building, better communication skills, preventing burnout and stress helps to deliver good patient care. This training programme is at free of cost, and it is implemented in various medical colleges in India.

### 35. A Hospital Based Study on Depression in the Elderly

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**Introduction:** As longevity of human life increases, we see an increase in the morbidity, disability and decline in the quality of life. Depression is an important mental illness among the elderly and leads to poor outcome for physical ailments and a poor functional status. Various socio demographic factors and medical illness are associated with depression. The physical health and mental status like depression are not only related to each other, but also influences significantly one another. Hence it is important to identify the various risk factors associated with depression.

**Objectives:** 1. To determine the prevalence and the factors associated with depression in the elderly attending the hospital.

2. To correlate the severity of depression with the various risk factors.

**Methodology:** This cross sectional study was conducted in the Department of Geriatric Medicine, Madras Medical College/ Rajiv Gandhi Government General hospital, Chennai. After obtaining informed consent, 200 patients attending Geriatric OPD were screened for depression using Geriatric Depression scale (short form) Tamil version, of which 122 patients were found to be depressed. The details of various socio demographic factors, medical illness were obtained using a preformed questionnaire. The following assessment tools 1. Geriatric Depression scale (short form) 2. Katz index for ADL and 3. Minicog for cognition were used. The results were analyzed.

**Results:** 122 patients out of 200 screened had GDS score > 5, with the prevalence of depression of 61%. Among the depressed elderly 32.8% had moderate depression (score 5 - 10) and 67.2% had severe depression (score 10- 15). The age groups: 60 to 70 yrs - 60.7%, 71 to 80 yrs - 29.5%, above 80 yrs - 9.8%. The males were 58.2%, females 41.8%. The

educational status: 18% were illiterate, 77% school education and 5% graduation. Economic status of the depressed group: 72.2% were either dependent on their children or the old age pension by the Government and only 27.8% were earning a regular income. The pattern of living showed 38.5% were either living alone or with their spouse only and 41.8% were living with their children and

**Discussion:** 19.7% in joint family. With regard to functional status 93.4% were independent and 6.6% were semi dependent. The co morbidities found in the depressed elderly are Systemic Hypertension - 53.3%, DM - 45.9%, CAD - 38.5%, CVA- 15.6%, COPD - 21.3%, Musculoskeletal - 30.3%, hypothyroid- 4.9%, GERD & dyspepsia - 2.5%, Insomnia - 3.3%, seizure disorder - 3.8% and Parkinson's disease- 1.6%. The number of co morbidities was directly proportional to depression. Elder Abuse present in 27.9% and no abuse in 72.1%. The relationship of multiple factors and severity of depression is also analyzed.

The prevalence rate of depression in elderly attending the hospital is 61%. This is higher than seen in the community studies probably due to the physical illness. There was a significant association between the depression and the cumulative burden of medical illness. This is similar to few studies done in hospitalized elderly patients.

With regard to socio demographic factors, there was no association found with regard to age, sex, literacy, pattern of living & family support and functional status. There was a significant association of depression with the economic dependency. Majority of the group had severe depression and multiple factors are responsible for the severity.

**Conclusion:** Geriatric depression is prevalent in a higher degree in hospital population. Physical illness and economic dependency are important risk factors for depression. Hence counseling and emphasis on compliance to therapy of medical illness to the sick elderly is necessary.

### 36. Enhancing Cognition of Illiterate Elderly Demented Patients: Evidence Based Non-Pharmacological Strategies

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It is well documented that with advancement in age, changes occur within the brain that alters

various higher level mental functions i.e. cognition. Further, with advancement in knowledge the intensification or extension of core cognitive ability through internal (psyche) or external (milieu) improvements or strengthening was thought to be developed. Cognitive enhancers are not only the pharmacological interventions but also non-pharmacological interventions (such as learned "tricks" or mental strategies as well as memory themes and memory prostheses). Subsequently, improvements in external devices and psycho-social milieu also support cognition. Using cognitive enhancement strategies a person with poor memory may be able to lead a better quality of life. Taking this into cognizance with funding support of Indian Council of Social Science Research a study titled 'Developing Modules for Cognitive Enhancement for Illiterate Older Adults with Cognitive Deficits' was conducted in the department of geriatric mental health. The aim of the study was to identify cognitive enhancers for illiterate older adults (60 years and above) with cognitive impairment (MCI and Mild to Mod. Alzheimer's Dementia-AD).

The study was carried out on the patients with chief complaints of cognitive decline (forgetfulness), diagnosed as MCI or Mild to Moderate by the consultant. Need based interventions were provided. Pertinent issues will be discussed.

### 37. Drug utilisation pattern in geriatric patients of a tertiary care teaching hospital in south India

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**Introduction:** The growth rate of elderly population is ever increasing with current growth rate of 1.9% as compared to that of general population, which is 1.2%. Multiple medications are prescribed in elderly due to the associated comorbidities. This increases the irrational prescription, use of inappropriate medications and adverse reactions. These hurdles in pharmacotherapy can be overcome by periodic evaluation of drug utilization and optimizing prescribing pattern by forming prescription guidelines for geriatric patients. Drug utilization research is an important tool to analyze the use of drugs with special emphasis on medical, social, and economic consequences in a society.

**Objectives:** To study the drug utilisation pattern in geriatric (age > 65 years) outpatients of a tertiary care teaching hospital of south India.

**Methodology:** This cross sectional study involving 217 patients was carried out from August 2015 to September 2015. Prescriptions were collected from hospital pharmacy and analysed for demographics, indications, drugs acting on various systems involved – by anatomical therapeutic classification and various drugs prescribed. Drug utilisation pattern was assessed using the World Health Organization prescribing indicators.

**Results:** A total of 217 prescriptions were collected from 105 male and 112 female geriatric patients. Totally, 1084 drugs were prescribed. Average number of drugs per prescription was 4.99. Generic name was used to prescribe 152 (14.02%) drugs and rest by brand names. Cardiovascular diseases were the most common reason for prescription. The frequently prescribed medicines belonged to cardiovascular group – 54%, hypolipidemics – 29%, multivitamins and minerals – 26%. Average number of fall risk-increasing drugs prescribed per prescription was 2.39 (95% CI, 2.01-2.82)

**Discussion:** Polypharmacy (>4 drugs/prescription) in this study is due to comorbid diseases in the geriatric study population. Prescriptions had a good number of drugs from WHO essential drug list but prescription by generic names was poor. Drug interactions and adverse effects increase due to polypharmacy. Beers criteria will be handy in avoiding adverse effects due to inappropriate combinations of drugs. Fall risk-increasing drugs should also be looked for in Beer's criteria while prescribing.

**Conclusion:** Rational polypharmacy should be encouraged in view of co-morbid conditions in geriatric population. drug utilization research is to facilitate the rational use of drugs in populations. High-level polypharmacy (>10 drugs/prescription) is not seen.

### 38. Assessment of the cognitive impairment in the elderly persons admitted in a tertiary care hospital

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Dr. Sukhpal Kaur<sup>2</sup>, Dr. AK Mandal<sup>3</sup>*  
PGIMER Chandigarh.

**Abstract:** A descriptive study was conducted in Advanced Urology Centre, Nehru Hospital, Post Graduate Institute of Medical Education and Research, Chandigarh to assess the cognitive impairment among elderly patients (aged 60 to 70 years). A total of 25 subjects were selected for the

study. More than half (52%) were in the age group of 60 to 63 years. The mean age of the subjects was 63.96 ±3.56 years. The cognitive impairment was assessed using the Mini Mental Status Examination scores (MMSE) scale. More than half of the subjects had mild cognitive impairment, 20% each had normal cognitive functions and moderate cognitive impairment. The study showed that cognitive impairment worsens with age.

### 39. Study prevalence of Rheumatic Heart Disease in elderly population of Western Rajasthan

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**Introduction:** RHD is the most common cause of heart disease in children and young adults in developing countries. However, in the elderly age group RHD is under recognized etiological factor in heart diseases and CHF.

**Objectives:** To study clinical profile of RHD in patients with first time presentation at the age >=60 years.

**Methodology:** Comprehensive Clinical evaluation including history and examination, laboratory investigation and 2D echocardiography with doppler performed for every subject at MDMH Jodhpur.

**Results:** Out of 100 subjects in study group, prevalence of RHD is more in female as compared to males in elderly, mean age of study population was 65.06±5.28 years, 36% males and 64% females with M:F 1:1.8. There was significant difference in rural/urban distribution of study and control group. (P value 0.029). Mitral stenosis was the most common valvular lesion in study group (82%) while Mitral regurgitation was most common valvular lesion in control group (84%). Aortic stenosis was present in 16% of study subjects and among them 50% subjects had severe aortic stenosis and in control group only mild and moderate aortic stenosis was observed.

**Discussion:** RHD may present for the first time in elderly. RHD is more common in urban subjects. Chest pain with associated IHD is more frequently seen in elderly. Type and severity of rheumatic valvular involvement is similar as in young. Atrial fibrillation is more frequently observed in elderly with associated complications.

**Conclusion:** RHD, more commonly MS, MR is prevalent in elderly and AF is the most common complication along with CHF.

**40. An exploratory study to identify physical and psychosocial problems of the elderly registered in the department of Urology at a Tertiary care hospital**

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Ageing is a part of life and its degenerative nature. It exposes the individual to several physical, social and psychological problems. The present study was conducted to assess the physical and psychosocial problems of the elderly registered with the department of Urology, PGIMER, Chandigarh. Using purposive sampling technique 76 participants were selected. The Barthel Index Scale and the Geriatric Depression scale were used to collect the data.

This study showed that 1.3% of the subjects of the were fully dependent on others, 2.6% were partially dependent and 96.1% were independent to perform the activities of daily living. Further, 40% of the subjects had depression, 10.5% were rated at borderline & 50% of the subjects had no depression.

**41. Delusional Parasitosis secondary to Post Herpetic Neuralgia: A case series**

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Delusional parasitosis is a relatively rare psychotic illness characterized by an unshaken belief of having been infested by a parasite, when one is not. It can be Primary (single delusional belief of having been infested by parasite – a type of monosymptomatic hypochondriacal psychosis), Secondary (occur in the context of other mental disorder like schizophrenia, depression, and dementia) or Organic (secondary to organic illness).

This case series presents two cases of elderly patients presenting with primary symptomatology of Delusional parasitosis involving the scalp region. Both cases had a presenting complain of insects crawling over their scalp region and demonstrated the 'matchbox sign'. However, the response to antipsychotic and antidepressant medication was noted to be clinically modest. On detailed medical history, both cases were found to have suffered from Shingles of the scalp and on examination post herpetic scars were present. Treatment for post-herpetic neuralgia (PHN) was commenced and resulted in a full recovery.

Organic causes must be routinely looked for in the patients presenting with Delusional Parasitosis. PHN must be considered as a potential underlying cause, especially if suggested by history or general physical examination.

**42. Study of association of vitamin D levels with bone & muscle strength & prevalence of its deficiency in ambulatory healthy elderly people of Western Rajasthan**

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**Introduction:** Vitamin D deficiency is the most underdiagnosed nutritional deficiency. Bone mineral density (BMD) is used in clinical medicine as an indirect measurement of osteoporosis and fracture risk. This study is done to assess vitamin D levels in ambulatory healthy people of age more than 60 yrs of Western Rajasthan and to find out association of these levels with bone and muscle strength.

**Aims and Objectives:** To describe serum 25-OH vitamin D status and correlate bone and muscle strength with levels of vitamin D in ambulatory healthy elderly population of western Rajasthan.

**Methods:** Comprehensive clinical evaluation, physical examination and physical strength assessment using appropriate tools, laboratory investigations, DEXA scan, and Vitamin D level estimation were performed at MDM hospital.

**Results:** Out of 100 healthy elderly ambulatory persons, mean age 73±6.7 years, older age groups had lower vitamin D levels. Vitamin D levels were comparatively lower in females, 37.97% males and only 28.57% females had normal vitamin D levels (p value=.0015), 66.66% urban and 29.26% rural population had normal vitamin D levels. Correlation of BMD with age was statistically significant (p value=.0025). BMD of 50.87% subjects of 61-70 yrs age was normal, 35.71% subjects of 71-80 yrs age and only 40% subjects >80 yrs had normal BMD. Correlation of vitamin D levels with BMD was found to be statistically very significant (p value=.000).

**Discussion:** Vitamin D deficiency is prevalent more in rural population & elderly and females comparatively resulting in decreased bone strength.

**Conclusion:** Vitamin D deficiency occurs predominantly in rural population in western Rajasthan. BMD correlates with vitamin D levels in elderly, rural and females.

#### 42. A cross-sectional study on the prevalence of potentially inappropriate medication in elderly patients of CKD

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**Introduction:** The burden of chronic kidney disease has increased globally. In order to promote safer drug treatment, it is important to assess the potentially inappropriate medication (PIM) use in the elderly patients. PIM is associated with adverse drug reactions, increased hospitalization, and mortality.

**Objective:** To determine the prevalence of potentially inappropriate medication (PIM) in elderly patients of CKD.

**Methods-** Patients, 60 years or more, attending the renal clinic OPD were included. The prescriptions were reviewed for potentially inappropriate medication (PIM) use according to the American Geriatric Society updated Beers Criteria 2012. Patients were classified into different CKD stages as per KDIGO guideline. Multivariate logistic regression analysis was used to determine the predictors of PIM prescribing.

**Results:** Data from 150 CKD patients was collected over a period of eight months. The average age was 68.2±7.2 years. Of all, 32% of the patients belonged to the lower socioeconomic status. 72% of the patients were bearing the cost of their treatment. 22% of the patients were found to be on dialysis. Hypertension was found to most commonly occurring comorbidity (59%, of the total number of patients).

The average number of diagnosis was 3.6±1.4 and the average number of drugs prescribed was 6.9±2.1. Only 18 patients were found to be prescribed PIM according to modified AGS updated Beers criteria 2012. Prazosin and nitrofurantoin were two PIM prescribed to 15 and 3 patients, respectively. Patients prescribed with six or more medications had a significantly higher risk of PIM ( $p < 0.05$ ).

**Conclusion:** 12% of the medicines were found PIM according to modified AGS updated Beers criteria 2012. The results demand a watch on the drugs prescribed to the elderly patients suffering from CKD.

#### 43. A Study of nutritional status of Elderly Living in Old Age Home and Within Family

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The last century has witnessed a rapid increase in the population of the elderly in the developed and industrialized countries. The scenario in India is also not very different. Older adults are at risk of malnutrition due to physiological, psychological, social, dietary and environmental factors. Changing socio-demographic profile of the society is also likely to impact the general health care and well being of the elderly. Also, the nutritional status of the elderly is an important factor in assessing the overall health status and hence, this study was conducted to assess the nutritional status of the elderly living in old age homes in comparison to those residing with the family.

The aims and objectives of the study were to assess and compare the nutritional status of elderly living with family and at old age homes according to Mini Nutritional Assessment and anthropometric measurement. The secondary objective was to assess the association between nutritional status and socio-demographic characteristics of these elderly subjects. The sample was selected using the "Purposive sampling" technique to select 30 elderly from the old age home of Lucknow as well as a similar number from the family setups. Written informed consent was taken from all the subjects. Socio-demographic details were taken on a semi-structured proforma. Nutritional status was assessed combining anthropometric measurement and Mini Nutritional Assessment. The results of the study will be discussed.

#### 44. A Study of The Prevalence And Risk Factors Of Undernutrition Among Elderly Patients At A Medical College Hospital In South India

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**Introduction:** Malnutrition is an under-recognized problem in the elderly patients. The factors implicated in this are multifactorial. Several

studies have shown that the prevalence of under-nutrition in hospitalized elderly patients remain excessively high, reaching 30–55%. Under nutrition in the elderly hospitalized patients has been associated with impaired cognition, impaired functional status, increased co morbid illnesses and prolonged duration of hospital stay / death.

**Objectives:** 1. To determine the prevalence of under nutrition among the elderly patients admitted to the medical wards, using the MNA- SF tool; 2. To determine the relationship of nutritional status with functional status and duration of hospitalization.

**Methodology:** The study was conducted among 200 patients aged  $\geq 60$  years admitted in the medical wards of St. John's Medical College, Bangalore, between December 2014 and August 2015.

Their nutritional status, functional activity was assessed by administering the questionnaires for MNA- SF and the Barthel's ADL score respectively. The duration and outcome of hospitalization was noted from the medical records.

The prevalence of malnutrition was assessed, and MNA-SF scores compared with the ADL scores and duration of hospital stay and assessed for any statistical association. The data obtained was assessed using the SPSS v 16.

**Results:** 45 (22.5%) of the 200 patients were undernourished as per the MNA SF tool. Majority of these (n=23, 51%) were elderly men, belonging to the young-old age category. The mean duration of hospitalization appeared to be increased in the undernourished patients.(n= 9.13.  $p>0.01$ ). The functional activity was indirectly proportional to the nutritional status of the patients, and there was a statistically significant negative correlation between the ADL and the MNA scores. ( $r = 0.355$ ,  $p = 0.000$ )

**Conclusion:** The study emphasizes on the need for nutritional assessment in geriatric patients. It can serve as a surrogate marker of disability and poor clinical outcome.

#### 45. Admission of elderly in emergency units of a tertiary care centre: Causes and problems

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**Abstract:** Elderly population is the most vulnerable population. With the increase in age, there is decline in the body function and eventually the person becomes more prone to health problems. A descriptive study was conducted to assess the causes and problems of elderly people visiting emergency units of a tertiary care centre. Using purposive sampling technique, 300 subjects with 100 each from emergency medicine, surgery and trauma units were enrolled in the study. Primarily the informants were the patients and in case the patients were not able to communicate, the information was obtained from the caregivers. They were asked their socio-demographic profile, physical, social, financial, and the organizational setup problems in emergency. Mean age of patients was 68.18yrs. Maximum admissions in medicine unit were because of cardiovascular problems and in the surgery unit gastrointestinal system problems were predominantly more. However, in trauma unit, 60% subjects were admitted with musculoskeletal problems e.g. fracture of upper and lower limbs. Hypertension was the leading co-morbidity in the subjects of all the three units. After approaching the respective units, 93% subjects in medicine, 83% subjects in surgical unit and 86% subjects in trauma were checked within one hour of their arrival in emergency. 63% in medicine emergency unit, 48% subjects in surgical unit and 99% in trauma unit were not able to maintain their hygiene. In medicine 60% subjects, in surgical unit 59% subjects however in trauma 53% subjects were not able to bear their financial expenses. As per organizational setup problems insufficient beds and unsatisfactory sitting arrangement for relatives were the main problems reported by majority of the respondents in all the three units.