

WORLD CONGRESS  
ON OSTEOPOROSIS,  
OSTEOARTHRITIS AND  
MUSCULOSKELETAL  
DISEASES

# VIRTUAL CONGRESS

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AbstractBook

**Conclusion:** Results demonstrated a diet with more pro-inflammatory potential was associated with high risk for osteoporosis. Also, our results suggested an inverse association between daily protein, energy and carbohydrate intakes with osteoporosis in community-dwelling older Iranian adults. Further studies are required to confirm these findings.

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### COGNITIVE FRAILTY: PREVALENCE ESTIMATES AND ASSOCIATION WITH BODY COMPOSITION IN OLDER MEN: CROSS-SECTIONAL, POPULATION-BASED DATA

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**Objective:** Cognitive frailty, the co-presence of physical frailty and cognitive impairment, is associated with adverse health outcomes. We examined the prevalence of cognitive frailty for Australian men and investigated the association of cognitive frailty with body composition.

**Methods:** This cross-sectional study involved 312 men ages 60-96 y from the Geelong Osteoporosis study. Frailty was identified by low hand grip strength (HGS, kg) measured by dynamometry, and slow gait speed using a timed 4-m walk (m/s). Cognitive function was assessed in four domains: psychomotor function, memory, learning, and executive function using a computer-based program. Cognitive impairment in each domain is scores beyond 2SD of poor performance; impairment at least in one domain with muscle slowness or weakness is cognitive frailty. Prevalence estimates were standardised to the Australian population. Appendicular lean mass and total body fat mass were measured by DXA and adjusted by height or BMI. Logistic regression analysis were applied to investigate the association between cognitive frailty and body composition.

**Results:** There were 48 (15.4%) men with cognitive impairment in any domain, and 4 (1.3%) and 93 (30.4%) with muscle weakness or slowness, respectively. Prevalence estimates of cognitive frailty was 8.6% (95%CI: 6.1-11.1). The prevalence of cognitive frailty increased across age groups ( $p < 0.001$ ) with 2.1% in people aged 60-69 y, 5.5% in aged 70-79 y, and 30.0% in aged 80+ y. Cognitive frailty was associated with age (OR 1.15; 95%CI 1.10-1.21;  $p < 0.001$ ). Cognitive frailty was associated with ALM/height<sup>2</sup> (OR 0.56; 95%CI 0.32-0.96;  $p < 0.05$ ) and ALM/BMI (OR 0.02; 95%CI 0-0.93;  $p < 0.05$ ) independent of age.

**Conclusion:** This is the first Australian study to report cognitive frailty prevalence. Future studies are warranted to explore the underlying pathophysiology and intervention programs to cognitive frailty.

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### SKELETAL MANIFESTATIONS OF KLIPPEL TRENAUNAY WEBER SYNDROME: A CASE REPORT

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It is a congenital vascular disorder that consists of a "triad" of symptoms affecting either one or more limbs. This "triad" constitutes bone and soft tissue hypertrophy, varicose veins, and cutaneous hemangioma. Bony and soft tissue hypertrophy may lead to the affected limb becoming either very large or very small. Cutaneous hemangioma may present either as a port-wine stain or nevus. This is generally accompanied by varicose veins which are often very numerous. It is most commonly seen in childhood or adolescent age groups. This report describes the skeletal manifestation along with diagnostic signs of Klippel Trenaunay syndrome.

**Case report:** A 35-year-old man reported with the triad associated with Klippel Trenaunay syndrome. On clinical examination, substantial port wine stain was seen and radiographs showed multiple bony outgrowths whereas MRI showed multiple varicosities displaying heterogeneous hyperintense signals on T2 Weighted Images and T1 hypointensity with hypertrophy of soft tissue in the left lower limb. He was concerned with cosmetic issues caused due to the hypertrophy of the lower limbs. Due to the various vascular malformations and since the patient did not have any functional impairment it was deemed unwise to offer him surgical intervention. Hence, the patient was counselled regarding the nature of his condition and no intervention was done for this patient.

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### LOW-LEVEL INFLAMMATION AND COMORBID PATHOLOGY IN OSTEOARTHRITIS

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**Objective:** The combination of osteoarthritis (OA) with metabolic disorders and diseases of the cardiovascular system leads to a significant deterioration in the quality of life and a

high level of physical disability. Aim: Determination of the level of nicotinamide phosphoribosyltransferase (Nampt) in the serum of patients with OA without comorbid diseases (CR), with OA and cardiovascular diseases (CVD), with OA, CVD and metabolic syndrome (MS) to clarify significant risk factors for the production of pro-inflammatory cytokines in patients with OA.

**Methods:** 120 people were examined: 30 people - a group without significant diseases, 20 patients with OA, 40 - with OA and CVD, and 30-with OA, CVD and MS. The average level of Namppt in the blood serum was minimal and amounted to  $24.3 \pm 2.86$  ng/ml ( $M \pm SD$ ), in patients with OA without significant comorbid diseases -  $27.21 \pm 5.7$  ng/ml ( $p=0.02$ ), the highest in patients with OA, CVD and MS -  $42.29 \pm 12.77$  ng/ml ( $p < 0.0001$ ).

**Results:** There was no difference in the dependence of the level of circulating Namppt in patients with OA without CR and patients with OA and GB ( $p=0.08$ ), there was a significant difference in the level of Namppt in patients with OA without CR and OA in combination with CHD, the maximum level of Namppt was detected in patients with MS. This group had the largest waist size (OT) -  $105.13 \pm 13.39$ , the highest BMI -  $33.6 \pm 4.99$ .

**Conclusion:** A significant positive correlation was found between Namppt, ESR, and CRP. A high association of Namppt with BMI was found in patients with OA without CR ( $r_s=0.6803$ ), and with OT in patients with OA and MS ( $r_s=0.6395$ ). Discussion. The main source of Namppt was thought to be abdominal fat cells. Namppt has been proven to synthesize monocytes, macrophages, dendritic cells, T cells, and B cells. Visceral fat is more active than subcutaneous and lean tissue. Normally, the level of Namppt correlates with BMI, in MS - with the volume of visceral fat, in acute damage - with the intensity of the inflammatory process. The level of Namppt in the serum of patients with OA increases with an increase in comorbid pathology, has a direct correlation with highly sensitive CRP, ESR, and simple anthropometric indicators - BMI and OT. OT most accurately reflects the severity of abdominal obesity and low level inflammation, companions of the metabolic syndrome. The positive correlation between laboratory markers of inflammation and OT confirms the role of Namppt as a proinflammatory cytokine in the pathogenesis of cardiovascular disease progression in patients with OA and MS. Abdominal obesity is the leading risk factor for maintaining low-level inflammation, and it is a modifiable factor in contrast to age and heredity. The study showed a link between laboratory markers of inflammation, anthropometric indicators, and Namppt concentrations. Overweight and increased waist circumference are the most significant predictors of low-level inflammation in patients with OA and comorbidity, and are positively correlated with higher concentrations of highly sensitive C-reactive protein and ESR.

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## OSTEOSARCOPENIA AND BIOMARKERS OF BONE HEALTH IN IRANIAN OLDER PEOPLE: THE BUSHEHR ELDERLY HEALTH (BEH) PROGRAM

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**Objective:** Osteosarcopenia is referred to as co-incidence of osteoporosis/osteopenia and sarcopenia which is defined as a geriatric syndrome with a significant prevalence that increases morbidity and mortality. There are some predictive factors that can show an increased risk of incidence of osteosarcopenia. This study aimed to consider the association of bone turnover markers and also some other risk factor like vitamin D deficiency with osteosarcopenia in elderly.

**Methods:** We carried out a cross-sectional study on a random sample including 400 elder participants of BEH study, in Iran. Osteopenia/osteoporosis was defined as a T-score  $\leq -1.0$  SD below the mean values of a young healthy adult. We defined sarcopenia as low muscle strength with reduced skeletal muscle mass. Osteosarcopenia was considered as the presence of both osteopenia/osteoporosis and sarcopenia. We estimated the age-standardized prevalence of osteosarcopenia for men and women, separately. We used multivariable logistic regression to address the factors associated with osteosarcopenia.

**Results:** The total prevalence of osteosarcopenia was 19.1%. The results showed that there was a statistically significant difference in osteocalcin (OC), C-terminal cross-linked telopeptide (CTX), and tartrate resistant acid phosphatase (TRAP) were between the normal and osteosarcopenia groups. No statistically significant difference was observed in bone alkaline phosphatase (BALP), vitamin D, calcium, phosphorous, and ALP between the compared groups. In the multivariable logistic regression model, OC and CTX were associated with increased likelihood of osteosarcopenia [adjusted OR=1.023(1.002-1.045 for OC, 4.363(1.389-15.474 for CTX)]. Furthermore, TRAP increases the odds of osteosarcopenia in crude model [OR=1.333 (1.070- 1.660)].