

Results: Structure of Care Centres enrolled onto the WHITE programme had a significantly larger surgical workload than those centres not enrolled, (median 514 vs. 335 cases; $p < 0.00$), however there was no statistically significant difference observed in the proportion of centres which offer an Early Supported Discharge (ESD) service (0.75 vs. 0.54; $p = 0.64$). Processes of Care We found a small but significant difference in the proportion of patients attaining the Best Practice Tariff in WHITE-enrolled centres compared to those centres not enrolled (0.69 vs. 0.64; $p = 0.01$), as well as in the proportion of patients receiving a perioperative medical review (0.95 vs. 0.91; $p = 0.00$). We saw difference in the proportion of patients being admitted to an orthopaedic ward within 4 hours (median 0.37 vs. 0.44; $p = 0.11$), or in the proportion receiving their surgery within 48 hours of admission, (median 0.77 vs. 0.74; $p = 0.28$). Outcomes of Care No difference in 30-day mortality was observed between centres enrolled in the WHITE protocol compared to those centres not enrolled (median 0.07 vs. 0.07; $p = 0.12$), or length of acute stay (median 15.9 vs. 16.2 days; $p = 0.42$).

Conclusion: The WHITE cohort centres tend to be higher volume and demonstrate higher attainment of some markers of quality process compared to non-WHITE centres. Recruitment of additional smaller lower volume centres may improve generalisability to the wider UK population

PE 3-25

Pre and post fracture vitamin d: variability linked to inflammation

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Introduction: Vitamin D is a fat-soluble hormone with pleiotropic effects, whose deficiency in the elderly contributes to the development of osteoporosis and sarcopenia, increasing the risk of fractures, falls and consequent morbidity and mortality. Studies show a very low level of vitamin D in patients with hip fractures but it has never been shown whether

there is an influence of inflammatory stress linked to surgery in reducing these levels or whether it is linked only to pre-fracture conditions.

The aim of the study was to compare the circulating levels of 25-hydroxycholecalciferol, in the pre- and post-operative stages and to find a relation between the reduction of vitamin D levels and the inflammation markers in patients undergoing surgery for hip fracture.

Methods: We recruit hip fracture patients aged over 65. Were excluded from the study: inoperable patients, those with secondary fractures to neoplastic diseases, subjects suffering from severe renal and hepatic impairment, those with known infections and bone metabolism diseases (primary hyperparathyroidism, Paget) and those undergoing systemic chronic corticosteroid therapy.

Blood tests were performed for each patient at time zero (T0) and on the second post-operative day (T48), with the following parameters: blood count with formula, vitamin D (VIT D), PTH, PCR, albumin, D- Dimer, fibrinogen, ferritin, calcemia and creatinine. For each parameter have been evaluated: the variations, the significance of these and the possible correlations between them.

Results: Our sample is made up of 50 patients: 41 females and 9 males, mean age: 82.25 ± 8.11 years. The analysis of the blood tests carried out at time 0 and on the second post-operative day (T48) shows a statistically significant reduction ($p < 0.001$) of post-operative VIT D values (11.37 ng / ml vs 9.4 ng / ml). Finally, the evaluation of the relationship between VIT D and inflammation markers, measured respectively at T0 and T48, shows only an inverse correlation between VIT D levels and PCR ($p = 0.044$, $r = -0.289$) which significantly increase ($p < 0.001$) in the post-operative period (5.45 mg / dl vs 14 mg / dl).

Conclusion: In literature there is evidence of a link between VIT D levels and systemic inflammatory level, typical of subjects suffering from fragility fractures and surgically treated, probably due to the utilization of vitamin D storage during the anti-inflammatory reaction.

Our pilot study shows that the VIT D values, already deficient in most of our elderly patients, are further reduced after surgery. The relation with PCR could be

explained by the evidence of a genetic link between vitamin D and PCR; in fact some polymorphisms (SNP) in the PCR gene predispose to a phenotype with high PCR values and reduced vitamin values. By the importance of Vitamin D in the post-fracture and the high perioperative inflammatory level of elderly patients with hip fractures, a supplementation of VIT D should be prescribed.

PE 3-26

30-day mortality in elderly patients with a hip fracture using international scores-scale in two greek hospitals

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Introduction: Hip fractures in the elderly are accompanied by increased morbidity and mortality. The aim of this study was the predictive value of internationally used scales-scores, with regard to mortality within 30 days, in elderly patients with hip fracture in two Greek hospitals.

Methods: We studied 206 patients with hip fractures. The scales studied were the mental state (Abbreviated Mental Test Score, AMTS), the mobility state (New Mobility Score, NMS), the physical condition preoperatively (American Society of Anesthesiologists, ASA), the assessment of comorbidity (Charlson Index), the risk of mortality (Nottingham Hip Fracture score, NHFS), the risk of mortality and mobility condition (Modified Nottingham Hip Fracture Score, mNHFS), the survival (Sernbo score) and the date of surgical rehabilitation.

Results: A total of 16 deaths (7.8%) were observed. In patients who died there was statistically significantly higher ASA (36%, $p < 0.001$), Charlson (51%, $p = 0.001$), NHFS (18%, $p = 0.008$), mNHFS (19%), lower Sernbo (20%, $p = 0.002$), AMTS (23%, $p = 0.026$) and NMS (27%, $p = 0.010$) and a longer day of surgery (5th day vs. day 3, $p = 0.055$).

In multifactorial Logistic Regression ASA (OR=2.66, $p = 0.010$), Charlson (OR=1.28, $p = 0.046$) and NHFS (OR=1.51, $p = 0.086$) independent prognostic factors for mortality remained. The Receiver Operating Characteristic (ROC) analysis (curve) showed a very high predictive value of all the studied indicators (ASA: AUC=0.758, $p = 0.001$; Charlson AUC=0.742, $p = 0.001$; Sernbo: AUC=0.700, $p = 0.008$; NHFS: AUC=0.696, $p = 0.009$; NMS: AUC=0.687, $p = 0.013$; mNHFS: AUC=0.683, $p = 0.015$; AMTS: AUC=0.677, $p = 0.019$).

Conclusion: ASA, Charlson and NHFS remained independent prognostic factors for mortality assessment. Based on the ROC analysis, ASA, Charlson and secondarily the Sernbo score are reliable mortality estimates for hip fractures in the elderly.

PE 3-27

The influence of the severity of obesity on bone mineral density in premenopausal women

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Introduction: Body mass index (BMI) is thought to interfere directly in bone metabolism process. Even though excess BMI is considered protective against bone fractures, some reports stated that obesity may induce osteoporosis. The aim of this study was to compare bone mineral content (BMC), bone mineral density (BMD) and geometric indices of hip bone strength among three groups of adult obese premenopausal women (severely obese, morbidly obese and super morbidly obese).

Methods: This study included 65 young adult premenopausal women whose BMI $> 35 \text{ kg/m}^2$. They were divided into three groups using international cut-offs for BMI, group 1: 3545 = 13 women. Body composition and bone variables were measured by DXA. DXA measurements were completed for the whole body (WB), lumbar spine, total hip (TH) and