between lifestyle, BMI, and bone health across these generations. Questionnaire data were used to run linear regressions in generational pairs (n=461 from F0 to F1, n=188 from F1 to F2, and n=273 from F0 to F2) examining prudent diet score, alcohol consumption, smoking behaviour, and adult BMI. A subset of participants had dual-energy x-ray absorptiometry (DXA) scans, and to increase statistical power, these data were collapsed into parent and child pairs (n=60). Linear regressions examining parent-child associations in femoral neck and lumbar spine bone mineral density (BMD) z-scores were run, with adjustment for parent-child prudent diet score and adult BMI residuals. Results are presented B (95% confidence interval).

Results

Prudent diet score and adult BMI were significantly positively associated in all three generational pairs: F0 to F1 (Prudent diet score: 0.188 (0.079, 0.298); BMI: 0.316 (0.193, 0.439), F1 to F2 (Prudent diet score: 0.198, (0.004, 0.391); BMI: 0.217, (0.093, 0.341), and F0 to F2 (Prudent diet score: 0.376, (0.205, 0.546); BMI: 0.222, (0.105, 0.339). Generational associations were reported for alcohol consumption (F0 to F1) and smoking behaviour (F0 to F1 and F1 to F2). Femoral neck and lumbar spine BMD z-scores were significantly associated between parents and children, with associations remaining robust after adjustment (Femoral neck adjusted for diet: 0.400, (0.037, 0.764); Lumbar spine adjusted for diet: 0.553, (0.359, 0.747); Lumbar spine adjusted for BMI: 0.433, (0.173, 0.692).

Conclusion

Some, but not all, lifestyle factors were associated across three generations of the HCS. Significant associations of femoral neck and lumbar spine BMD between parents and children were robust to adjustment for lifestyle. Future studies in larger groups are now warranted.

OC39

THE DIFFERENT DIAGNOSIS CRITERIA OF THE EWGSOP2 DEFINITION AND THEIR RELATIONSHIP WITH 5-YEAR ADVERSE CONSEQUENCES

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Introduction: The new definition of the EWGSOP (2019) offers several diagnostic criteria for assessing muscle mass, muscle strength, and physical performance. We aimed to measure the impact of using one or other criteria on the prevalence of sarcopenia.

Methods: We included participants of the SarcoPhAge (Sarcopenia and Physical Impairments with Advancing Age) study, a population-based Belgian cohort involving 534 participants aged 65 years and older. Muscle mass was measured with Dual-Energy X-Ray absorptiometry (we compared ASM with ASM/height^2), muscle strength was measured both by Grip Strength using Jamar hydraulic hand-held dynamometer and the 5-times Chair Stand test, physical performance was measured by the 4-meter gait speed test, the Short Physical Performance Battery test (SPPB) and the Timed up and Go (TUG) test. Cox Proportional Hazard ratios were measured for 5-year incidence of mortality, institutionalization, and incidence of at least one fracture, fall, or hospitalization during the 5-year follow-up period. Analyses were adjusted for age, sex, number of drugs and comorbidities, cognitive status and physical activity level.

Results: The following prevalence of sarcopenia was found: 4.5% using ASM/height^2 + Grip Strength, 8.2% using ASM + Grip Strength, 9.0% using ASM/height^2 + Chair Stand and 14.2% using ASM + Chair Stand. The prevalence of severe sarcopenia varied from 1.1% (using the combined criteria of Chair Stand + ASM/height^2 + TUG) to 8.1% (using the combined criteria of Chair Stand + ASM + SPPB). Mortality data was analysed on 481 participants (53 lost-to-follow-up). Sarcopenia appears to be significantly associated with 5-year mortality only when the Grip Strength is considered as muscle strength measurement and nor with the Chair Stand test criteria. However, this relationship was no more significant in the multivariate fully-adjusted model. Regarding severe sarcopenia criteria, significant fully-adjusted HR of 3.01 (95%CI 1.7-6.60) was found for mortality using Grip Strength + ASM + gait speed criteria, HR of 2.87 (95% CI 1.23-6.68) was found using Grip Strength + ASM + SPPB criteria, HR of 2.61 (95% CI 1.09-6.25) was found using Grip Strength + ASM/heigt^2 + gait speed criteria and finally, HR of 2.68 (95% CI 1.04-6.93) was found using Grip Strength + ASM/heigt^2 + SPPB criteria. We never highlighted any predictive power of mortality when the Chair Stand test is used as measure of muscle strength or when the TUG is used as measure of physical performance. Regarding muscle mass, the use of ASM or ASM/height^2 seems however to have no specific impact on the predictive value of mortality. We did not find any association between one of the diagnostic criteria employed and 5-year incidence of fractures, hospitalization, institutionalization and falls.

Conclusion: Within a diagnosis of sarcopenia/severe sarcopenia, highlighted by our results, it could be justify to privilege Grip Strength to measure muscle strength and gait speed or SPPB test to measure physical performance. Indeed, as compared with Chair Stand test and TUG test, those former criteria seem more related to 5-year incidence of mortality.

OC40

COST-EFFECTIVENESS OF BINOSTO (BUFFERED SOLUBLE ALENDRONATE 70 MG) EFFERVESCENT TABLET FOR THE TREATMENT OF POSTMENOPAUSAL WOMEN WITH OSTEOPOROSIS IN ITALY

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Objective: To estimate the cost-effectiveness of Binosto (buffered soluble alendronate 70 mg) effervescent tablet compared to relevant alternative treatments for postmenopausal women with osteoporosis in Italy.

Methods: A previously validated Markov microsimulation model was adjusted to the Italian healthcare perspective to estimate the lifetime costs (expressed in €2019) per quality-adjusted life-years (QALY) of Binosto compared with generic alendronate, denosumab, zoledronic acid and no treatment. Pooled efficacy data for bisphosphonates derived from the NICE meta-analysis were used for bisphosphonate treatments and 1-year persistence of Binosto and alendronate was derived from a prospective observational study. Analyses were conducted for high-risk women 60-80 years of age with a bone mineral density (BMD) T-score ≤-3.0 or with existing vertebral fractures.

Results: In all of the simulated populations, Binosto was dominant (more QALYs, less costs) compared to denosumab. The cost per QALY gained of Binosto compared to generic alendronate and no treatment fall always below €20,000 per QALY gained. In women aged 75 years and older with prevalent vertebral fractures and in women aged 65 years and older with T-score ≤-3.0, Binosto was even shown to be dominant (more QALYs, less costs) compared to generic alendronate and no treatment. Zoledronic acid was associated with more QALY than Binosto but the cost per QALY gained of zoledronic acid compared to Binosto was always higher than €70,000 per QALY gained and thus not cost-effective.

Conclusion: This study provides the first economic analysis of an alendronate effervescent tablet, suggesting that Binosto represents a cost-effective strategy compared with generic alendronate, zolderonic acid and no treatment, and a dominant strategy compared to denosumab for the treatment of postmenopausal women with osteoporosis in Italy aged 60 years and over.

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