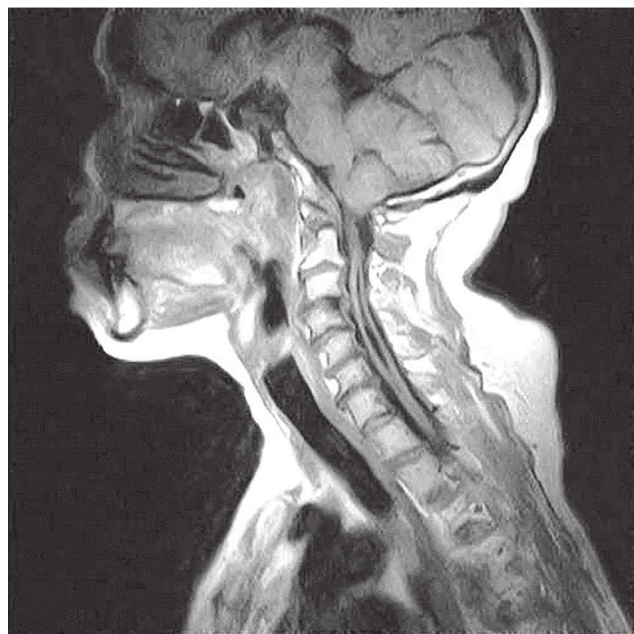


The MRI image shows herniation of cerebellar tonsils in the foramen magnum and syringomyelia of (C2-C5) (Figure 3).



Together, these features were consistent with the diagnosis of Type 1 Arnold Chiari syndrome. So, the vanishing head of humerus was due to bone resorption secondary to an advanced and rather unusual neuropathic joint. Then, pursuing the diagnosis of Type 1 Arnold Chiari syndrome in this patient was clearly, worthwhile particularly, in presence of a coexisting DM which is capable of producing neuropathic joint. Rheumatoid arthritis on the other hand was also reported to cause Gorham's disease, though rarely.

**Conclusion:** The message derived from this report that in some clinical instances the real cause of the disorder can be overshadowed by another condition(s) that might lead to a similar presentation.

**P153**  
**DETERMINANTS AND HEALTH CONSEQUENCES OF A RAPID MUSCLE HEALTH DECLINE IN OLDER ADULTS FROM THE SARCOPHAGE STUDY**  
 M. Locquet<sup>1</sup>, C. Beaudart<sup>1</sup>, J.-L. Croisier<sup>2</sup>, J.-Y. Reginster<sup>1</sup>, O. Bruyère<sup>1</sup>

<sup>1</sup>Public Health, Epidemiology & Health Economics, University of Liège, <sup>2</sup>Laboratory of Human Motion Analysis, University of Liège, Liège, Belgium

**Objectives:** To characterize the muscle health decline of older adults over 1 year and its association with adverse consequences over the 3 following years.

**Methods:** The SarcoPhAge cohort follows up 534 older adults to assess health consequences of sarcopenia. Subjects are seen annually and an assessment of muscle mass (DXA), muscle strength (handheld dynamometer) and physical performance

(4-m gait speed) are performed. Outcomes are collected either during annual follow-up visits or by phone. Individual relevant decline of muscle mass, muscle strength and gait speed between baseline and the 1-year follow-up was evaluated using the Edwards-Nunnally index. The association between muscle decline and occurrence of outcomes was tested using logistic regressions. Missing data were handle using multiple imputations. **Results:** 534 subjects were recruited ( $73.5 \pm 6.2$  y, 60.5% women) but during the first year, 7 deaths occurred. Consequently, analyses were performed on 528 subjects. The prevalence of a rapid muscle mass decline was 41.5% (n=219). Subjects presenting a decline of muscle mass had no difference of their demographic or clinical characteristics compared to subjects without decline (all  $p > 0.05$ ). The prevalence of a rapid decline of muscle strength was 47.3% (n=149). Subjects presenting a decline in muscle strength were more often women (21.2% of male vs. 66.0% of male,  $p=0.02$ ) and had a lower cognitive status (27.6 points vs. 28.1 points at the MMSE,  $p=0.02$ ). A significant decline in gait speed was observed in 28.2% (n=149) of the whole population. Subjects presenting decline of physical function were older (74.5 years vs. 73.0 y,  $p=0.01$ ), had lower BMI and cognitive status (25.8 vs. 26.8,  $p=0.03$  and 27.5 points vs. 28.0 points at the MMSE,  $p=0.04$ ). Over the 3 following years, a rapid decline in muscle mass and strength did not predict the occurrence of falls, fractures and hospitalisations. A rapid decline in gait speed predicted the occurrence of self-reported physical disabilities (adjusted OR=1.87[1.18-2.96]) as well as deaths (adjusted OR=2.36 [1.17-4.73]).

**Conclusion:** A significant proportion of the older population showed a rapid decline in muscle health, associated with age, sex, BMI and cognitive status. A rapid decline of gait speed predicted the occurrence of 3-y death and disabilities, highlighting the importance of an assessment of gait speed in older subjects.

**P154**  
**EWGSOP 2 VS. EWGSOP 1: IMPACT ON THE PREVALENCE OF SARCOPENIA AND ITS OUTCOMES**

M. Locquet<sup>1</sup>, C. Beaudart<sup>1</sup>, J. Petermans<sup>2</sup>, O. Bruyère<sup>1</sup>  
<sup>1</sup>Public Health, Epidemiology & Health Economics, University of Liège, <sup>2</sup>Geriatrics Department, CHU of Liège, Liège, Belgium

**Objectives:** In June 2018, we published a manuscript showing that sarcopenia, characterized by the EWGSOP definition (i.e., EWGSOP1), was associated with an increased risk of mortality (doi: 10.1016/j.jamda.2018.06.004). In October 2018, the EWGSOP proposed a new operational definition of sarcopenia (i.e., EWGSOP2). We sought to compare the prevalence of sarcopenia defined by EWGSOP1 and by EWGSOP2, and to determine the major outcomes associated with each of these definitions.

**Methods:** We used data available from the SarcoPhAge (for *Sarcopenia and Physical Impairment with Advancing Age*) cohort. To characterize sarcopenia, 3 main assessments were performed: the skeletal muscle mass index using DXA, the muscle strength using hand-dynamometer and the physical performance using SPPB test. According to EWGSOP1, sarcopenia is defined as a low muscle mass (i.e.,  $\leq 5.5 \text{ kg/m}^2$  for women,  $\leq 7.26 \text{ kg/m}^2$  for men) plus a low grip strength (i.e.,  $< 20 \text{ kg}$  for women,  $< 30 \text{ kg}$  for men) and/or low physical performance (i.e.,  $\leq 8$  points/12). According to EWGSOP2, sarcopenia is characterized by a low grip strength (i.e.,  $< 16 \text{ kg}$  for women,  $< 26 \text{ kg}$  for men) plus a low muscle mass (i.e.,  $< 6 \text{ kg/m}^2$  for women,  $< 7 \text{ kg/m}^2$  for men). If low physical performance (i.e.,  $\leq 8$  points/12) is also present, there is 'severe sarcopenia'. Outcomes were collected yearly during interview or by phone call. Association between sarcopenia and occurrence of outcomes was tested using Cox hazards model or logistic regression with adjustment for covariates known to potentially impact muscle health, including age, sex, BMI, number of comorbidities, number of coprescriptions, nutritional status, and cognitive status.

**Results:** 534 subjects were recruited ( $73.5 \pm 6.2 \text{ y}$ , 60.5% female). After 3 y, 33 participants were lost to follow-up, so data were available for 501 subjects. According to EWGSOP1, the prevalence of sarcopenia reached 13.6% and, when using the EWGSOP2, 7.4%. Sarcopenia, defined by EWGSOP1, was associated with an increased risk of 3-year mortality ( $\text{HR}_{\text{adjusted}} = 2.93$  [1.17–7.35]). According to EWGSOP2, this association was no longer significant ( $\text{HR}_{\text{adjusted}} = 2.74$  [0.98–7.65]), but remained in the same range as observed for EWGSOP1. In the subgroup of subjects with severe sarcopenia, we observed a higher occurrence of death ( $\text{HR}_{\text{adjusted}} = 4.50$  [1.56–12.98]) and institutionalization ( $\text{HR}_{\text{adjusted}} = 5.07$  [1.02–25.27]) than in non-sarcopenic individuals.

**Conclusion:** The EWGSOP2 definition of sarcopenia appears to decrease its prevalence due to changes in the algorithm and/or the thresholds compared to EWGSOP1. Furthermore, the proposed severity index, based on physical performance assessment, seems to be a determinant of the occurrence of deaths and institutionalizations.

## P155

### PILOT STUDY ON A NEW INTERVENTION PROGRAM FOR GERIATRIC HIP FRACTURE PATIENT WITH SARCOPENIA

A. W. H. Ho<sup>1</sup>, M. Y. Cheung<sup>1</sup>, L. C. Man<sup>1</sup>

<sup>1</sup>Department of Orthopaedics and Traumatology, Caritas Medical Centre, Hong Kong, China

**Objective:** Sarcopenia and osteoporosis increase the risk of falls, resulting in fragility fracture. The prevalence of sarcopenia was found to be alarmingly high (73.6% in males and 67.7% in females) in geriatric hip fracture patients [1].

Intervention program on sarcopenic hip fracture was set up at our center.

**Method:** All patients age over or equal to 65 admitted to Caritas Medical Centre with operatively treated hip fracture and diagnosed sarcopenia were included. Interventions include inpatient nursing education, dietary advice, therapist assessment and structured 12-week geriatric day hospital (GDH) exercise program. Those not eligible for GDH training were classified as control group. Changes in relative skeletal muscle mass index (RASM), muscle strength, functional scores were measured.

**Results:** There were 9 intervention and 10 control patients. The mean age in intervention group was 81.8 and control group was 77.0. Female to male ratio in intervention group was 7:2 and control group was 8:2. All patients were noted to have increment in RASM (intervention  $0.316 \text{ mm/kg}^2$ , control  $0.655 \text{ mm/kg}^2$ ,  $p < 0.05$ ), knee extension of good limb (intervention  $1.32 \text{ kg}$ , control  $0.92 \text{ kg}$ ,  $p < 0.05$ ) and injured limb (intervention  $5.78 \text{ kg}$ , control  $3.49 \text{ kg}$ ,  $p < 0.05$ ). All patients have improvement in functional scores ( $p < 0.05$ ). Between groups analysis showed there was statistically significant improvement in muscle strength of both good and injured limbs. There was also statistically insignificant decrement in RASM, MFAC and BI in intervention program group compared with control group.

**Conclusion:** Generally, there were improvement in muscle mass, muscle strength and functional recovery in all patients. There was apparent improvement in muscle strength but reduction in muscle mass in intervention group compared with control group. The result shows that intervention program with exercise prescription in sarcopenic hip fracture patient can improve the lower limb muscle strength but not muscle mass. These patients may be too frail to benefit from traditional exercise treatment for sarcopenia. Hip fracture patients with sarcopenia may represent a special group of sarcopenic individuals that are resistant to traditional exercise treatment for sarcopenia. Further studies are needed to investigate the potential benefits of extension of rehabilitation training program for this group of frail patients on sarcopenia treatment.

**Reference:** 1. Ho AW et al. Hong Kong Med J 2016;22:23

## P156

### ANOREXIA NERVOSA AS RISK FACTOR OF OSTEOPOROSIS

S. Irina Alexandrovna<sup>1</sup>, K. Shanmugaraj<sup>1</sup>, B. Keerthana<sup>1</sup>

<sup>1</sup>Department of Public Health, V.I. Vernadsky Crimean Federal University, Simferopol, Russia

**Objectives:** Anorexia nervosa happens to be one of the threatened psychological conditions which affect mostly teenagers.