performed by means of the Student $t$-test (or non-parametric Mann-Whitney test) for continuous variables and by means of the Chi squared test for categorical variables.

**Results:** A total of 662 subjects is included in this analysis. Among them, the mean age is $83.2 \pm 8.99$ years and 484 (73.1%) of them are women. In this population of nursing home residents, the prevalence of sarcopenia is 38.1% whereas the prevalence of frailty and pre-frailty are respectively 24.7 and 61.4%.

Among frail, pre-frail and robust subjects, respectively 47, 38.9 and 16.3% were diagnosed sarcopenic. Some clinical and demographic characteristics differ between subjects with sarcopenia and those without sarcopenia. Indeed, sarcopenic subjects are older (85.6 $\pm$ 7.48 years) than healthy subjects (81.9 $\pm$ 9.51 year; $p<0.0001$), they have a lower BMI (23.8 $\pm$ 5.15 vs. 27.2 $\pm$ 5.43 kg/m$^2$; $p<0.0001$) and a worse MMSE (23.4 $\pm$ 4.85 vs. 24.5 $\pm$ 4.26; $p=0.002$). Sarcopenic subjects more often come from nursing home providing care (35.4%) than non-sarcopenic subjects (25.6%; $p=0.02$). They also use more often walking assistance (62.1% vs. 52.1%; $p=0.009$). Compared to non-sarcopenic subjects, sarcopenic ones have a lower level of physical activity ($p=0.002$), a better score at the Tinetti test ($p<0.0001$), “Timed Up and Go” ($p=0.04$), “SPPB” ($p<0.0001$), gait speed ($p<0.0001$) and grip strength ($p<0.0001$). Isometric muscle strength is also lower among sarcopenic subjects than among non-sarcopenic subjects for knee flexors (0.04) and extensor (0.04), ankle flexors (0.03) and extensors (0.01), hip abductors (0.03), elbow flexor (0.0001), and extensors (0.002). Appendicular lean mass divided per height square is also lower among sarcopenic subjects ($p<0.0001$).

Finally, nutritional status is poorer among sarcopenic subjects ($p=0.04$), as well as the quality of life linked to “emotional role”, “functional role” and “change in health” (respectively $p=0.02$, $p=0.02$ and $p=0.04$).

**Conclusion:** This research highlights that over a third of nursing home residents are sarcopenic and the percentage is almost 50% among frail subjects; knowing that in nursing home setting, about 1 in 4 is frail. As expected, sarcopenic subjects have lower functional and motor abilities than non-sarcopenic ones.

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**EVALUATION OF THE INTRA-INDIVIDUAL VARIABILITY OF MYOSTATIN AND ACTIVIN A, TWO BIOMARKERS OF SARCOPENIA: IMPACT ON THE LEAST SIGNIFICANT CHANGE AND FOLLOWUP OF THE PATIENTS**

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**Introduction:** Myostatin (MYO) and Activin A (AA) are muscle growth inhibitors that act via the ActR/TGFβ receptors, followed by phosphorylation and activation of transcription factors Smad2/3. These biomarkers may be useful to help in the diagnosis of sarcopenia, to follow the diagnosed patients or to observe the impact of a treatment. For such a purpose, knowing the Least Significant Change (LSC) would be mandatory. Indeed, this parameter, that takes into consideration the analytical variability ($CV_a$) and the intra-individual biological variability ($CV_i$) can help to decipher whether a biologically significant change has occurred between two measurements in the same individual, with a given probability. For memory, the LSC formula is $LSC = SQR(2)*1.96* SQR(CV_a^2 + CV_i^2)$. We have recently shown that the R&D assays presented a $CV_a$ of 7 and 8%, for AA and MYO, respectively, but no data was to date available for the $CV_i$ of both analytes.

**Material and methods:** Twenty-two healthy young laboratory technicians (11 males, 11 females, 29.7 $\pm$ 4.6 years old) gave informed consent and were included in the study. At 08:00 AM, a blood sample was obtained while they were still in a fasting status. They were offered a standardized breakfast and then underwent a second blood sampling at 12:00. They were allowed to drink 500 mL of a poorly mineralized water between the two samplings, but were not allowed to eat any food. This study took place on the Mondays, Wednesdays and Fridays of two consecutive weeks of December. All the samples were processed immediately and frozen at $-80^\circ C$ for not more than 1 month. The assays were run with the R&D MYO and AA ELISA, in duplicate, in the same series and by the same experienced technician to minimize any other sources of variations. We used the one way analysis of variance to estimate the $CV_i$ of both parameters.

**Results:** Mean values obtained in the population were of 236.5 $\pm$ 58.7 pg/mL and 3106 $\pm$ 1030 pg/mL for AA and MYO, respectively. $CV_i$ was quite similar for both biomarkers: 12.3% for AA and 13.3% for MYO. This led to a LSC of 39 and 42% for AA and MYO, respectively.

**Conclusions:** LSC is mandatory to decipher whether a change occurred between two measurements of biomarkers is significant or not. In this study, we established the LSC for AA and MYO, two promising biomarkers of sarcopenia. Our data show that if this change is not higher than 40%, it means that it is only due to random and cannot be considered as significant, with a probability of 95%. This information will be most useful for the follow-up of the patients.