WHAT INFLUENCES ADL IN OLDER ADULTS WITH SEVERE MOBILITY LIMITATION?
Venturrelli Massimo¹, Muti Ettore², Scarsini Renato³, Lanza Massimo¹
(Università di Verona¹, fondazioni Mons. Mazzali MN², fondazione Mons. Mazzali MN³, Italy)

Background:
Aging is associated with reduction in activities of daily living (ADL) and this decline can play major role in loss of independence in elderly people. ADL performance assessed in active older are directly related with medical conditions, social and economy level and also with leg muscle strength and power. For very old people, unable to walk alone, is not possible to estimate lower body capacity and it is not clear if residual ADL are influenced only by biomedical conditions or also from fitness level of upper part of body. The purpose of this study was to determine if there are any relationship between upper body muscle strength, shoulders flexibility, arms circumferences, number of drugs, number of pathologies, cognitive level with ADL in older adults with severe mobility limitation.

Methods:
Forty-four patients, (16 men and 28 women; mean age 83.7±5y), not able to walk and dependent on assistance in one or more personal ADL, were evaluated in the community living center Arrigo Mazzali in Mantova. Test retest measurements of arms strength were assessed with arm curl test (AC), upper body flexibility were evaluated with back-scratch test (BS), standing arms circumferences was evaluated with a flexible tape measure (ACI). Number of pathologies (NP) and drugs treatments (ND) were collected by specialist in geriatrics medicine, physiotherapist assessed the ability to perform ADL with the Barthel index examination and cognitive level with MMSE. Multiple linear regression was use for estimate relations between ADL and AC, BS, ACI, NP, ND, MMSE.

Results:
The general equation pf multiple regression was ADL=-2.009+(1.229*AC)+(0.358*BS)+(0.628*MMSE)+(0.0682*ND)-(0.726*NP)+(0.371*ACI); overall correlation coefficient R=0.818. Significant correlations were found with AC and ability to perform ADL p<0.001, and also between BS & ADL p=0.004, ACI seem to be not related with ADL p=0.416. NP probably never influences ADL p=0.471 and ND p=0.929, but significant correlations were found with MMSE p=0.013.

Conclusion:
Biomedical condition evaluated with NP & ND in this dependent elderly group are higher than active older adults, but are homogeneously distributed and not related to residual ADL. Cognitive level and arms strength appear correlated to residual ADL, for older adults with severe mobility limitation an adequate level of arms strength and flexibility probably allows to be much more active and powerful in ADL. These data suggests that a good upper body fitness can be very helpful in elderly with severe mobility limitation and a specific training on upper limbs could also preserve from a complete drop in ADL and cognitive functions.

References:

Keywords: Elderly, Arm