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**Title:** The effect of radical treatment and pulmonary rehabilitation on muscle mass as measured with CT-scan: A randomised trial in patients (pts) with lung cancer and mesothelioma

Ms. Bihyga 14649 Salhi Bihyga.salhi@UGent.be <sup>1</sup>, Mr. Gilles 14650 Thysebaert Gilles.Thysebaert@UGent.be <sup>1</sup>, Dr. Thomas L. 14651 Malfait Thomas.malfait@uzgent.be MD <sup>1</sup>, Prof. Dr Karim 14652 Vermaelen Karim.Vermaelen@UGent.be MD <sup>1</sup>, Dr. Veerle F. 14653 Surmont Veerle.surmont@UGent.be MD <sup>1</sup>, Dr. Wouter 14660 Huysse wouter.huysse@UGent.be MD <sup>2</sup>, Prof. Dr Georges 14662 Van Maele georges.vanmaele@UGent.be <sup>3</sup>, Prof. Dr Jan P. 14676 van Meerbeeck jan.vanmeerbeeck@UGent.be MD <sup>1</sup> and Prof. Dr Eric 14668 Derom eric.derom@UGent.be MD <sup>1</sup>. <sup>1</sup> Respiratory Medicine, Ghent University Hospital, Ghent, Belgium ; <sup>2</sup> Radiology, Ghent University Hospital, Ghent, Belgium and <sup>3</sup> Medical Informatics and Statistics, Ghent University Hospital, Ghent, Belgium .

**Body:** Introduction: Cancer and its treatment are known to contribute to fatigue and functional impairment. The latter is thought to result from loss of muscle mass and strength. Aim: To investigate the effect of radical treatment and post-treatment rehabilitation on muscle mass and strength in pts with thoracic cancer. Methods: Muscle mass was estimated with the fat free mass (FFM) by bioelectrical impedance and the cross-sectional area (CSA) of skeletal muscle on a single 10-mm CT-scan slice. Muscle strength was estimated by the quadriceps force (QF). All variables were measured pre-treatment (M1), after radical treatment (M2) and after either 12w of rehabilitation (RA) or control (CON) (M3). Data are presented as medians with 95% CI. Results: Of 29 consecutive pts, 18 were allocated to RA and 11 to CON. Both groups have comparable M1 characteristics. At M2, all pts showed a significant decrease in muscle mass and strength. At M3, only RA-patients improved significantly their muscle mass. There is a good correlation between muscle CSA and FFM ( $r: 0.70$ ;  $p < 0.001$ ). Conclusion: Muscle mass and strength significantly decrease with radical treatment in pts with lung cancer and mesothelioma. Muscle mass increases with rehabilitation. CT scan can substitute bioelectrical impedance for measuring muscle mass. Mature data will be presented at the meeting.