Evaluation of Muscle Mass in clinical practice using Accessible methods – the EMMA study

Dr Georgios Saltaouras, Alexandros Tsigkas, Dr Michael Georgoulis, Dr Alexandra Karachaliou, Dr Alexandra Georgiou, Prof Liana Poulia, Prof Meropi Kontogianni
Contact (Georgios Saltaouras, Department of Nutrition and Dietetics, School of Health Sciences and Education, Harokopio University of Athens, Greece; **gsalt@hua.gr**)

Ελληνική Εταιρεία Ιατρικής/Κλινικής Διατροφής & Μεταβολισμού (GrESPEN)
ΑΠΟΚΛΕΙΣΤΙΚΟ ΑΝΑΓΝΩΡΙΣΜΕΝΟ ΜΕΛΟΣ ΤΗΣ ESPEN ΣΤΗΝ ΕΛΛΑΔΑ

Description of the initiative

Background / context

Malnutrition and sarcopenia are important medical issues and relevant diagnostic algorithms have been developed (GLIM and EWGSOP2, respectively). Low muscle mass (LMM) is a key component of both conditions and early identification in clinical practice, irrespective of weight status, is crucial to enable timely nutrition and physical activity interventions.

Rationale for the initiative

A main challenge in the implementation of the diagnostic algorithms in routine clinical practice is the assessment of muscle mass and identification of LMM, since access to sophisticated methods of body composition assessment (e.g. Dual-Energy X-ray Absorptiometry/ DXA) is rare. Ultrasound (US) and anthropometry are promising alternative ways of assessing muscle mass, but evidence in validity and reliability in different clinical conditions is lacking.

Objectives and scope

The EMMA study (Evaluation of Muscle Mass using Accessible methods) aims to investigate the ability of US and anthropometry to detect low muscle mass against more sophisticated methods (DXA) in clinical conditions showing high prevalence of LMM (inflammatory bowel disease/IBD, cirrhosis, cancer), in order to enable feasible and easily applicable alternative approaches in daily clinical practice. Secondary objectives: a) to explore differences of diagnostic accuracy across weight status categories and b) to explore correlations of muscle mass and performance status.

Planned activities & deliverables

Key steps

- Recruitment of patients diagnosed with IBD, cirrhosis and cancer from collaborating tertiary clinics in Athens, Greece
- Referral to Harokopio University, Laboratory of Clinical Nutrition and Dietetics for assessment of muscle mass using DXA scanning, US, calf and mid-arm muscle circumference; assessment of performance status
- Statistical analysis: Area Under the ROC Curve (AUC); numeric agreement (Bland–Altman), reliability (intraclass correlation), sensitivity/specificity and predictive value (multiple regression)

What are the concrete deliverables of the project?

A full report with detailed analysis of primary and secondary objectives.

What progress and achievements are possible in the next 12 and 24 months?

- Month 12: Confirmation of collaborations; Ethical approval; Recruitment and assessment of at least half the required sample.
- Month 24: Recruitment and assessment of the whole sample; statistical analysis; full report.

Resources & enablers

Personnel, financial needs, and any other funding in relation to the project

A team of experts in clinical nutrition, with substantial experience in statistical analysis is essential for the implementation of this project. It is estimated that personnel will contribute 20 hours per week. GrESPEN will oversee and coordinate all dissemination activities related to the project. No other funding has been received or applied for this proposal at this stage.

Specify how the grant will be spent

It is estimated that 31,000 euros will be needed for salaries. An additional 6,500 euros are needed for purchasing a US imaging equipment. Dissemination costs are estimated 2,500 euros (attributed to GrESPEN). Therefore 40,000 euros are requested for the duration of the project.

What factors will make the project successful?

Research team with strong clinical and methodological background; Established effective collaborations with tertiary clinics from previous research projects ensure the timely recruitment of required sample; access to DXA scan at Harokopio University premises.

Results, expected outcomes & impact

How will the findings be implemented?

The ability to estimate muscle mass with easily applied, rapid and reliable methods (US and anthropometry) will aid in the early identification of patients at risk or with malnutrition, sarcopenia or frailty, irrespective of weight status, that often remain undiagnosed in clinical settings due to under-assessment.

How will this project advance nutritional care in clinical practice?

This project focusses on demonstrating effective nutritional care and implementation of clinical nutrition management pathways and therapies. Despite extensive research highlighting the importance of muscle mass assessment and the development of diagnostic algorithms, its evaluation is not routinely performed in clinical practice. This study addresses this gap by exploring practical, time-efficient models that can be more easily integrated into everyday care. By reducing current barriers to nutritional assessment, these approaches can support health professionals in delivering timely interventions and improving patient outcomes. In the long term, routine muscle mass assessment may contribute to reduced healthcare costs by preventing complications related to malnutrition and shortening hospital stays. Additionally, this study provides valuable insights into the effectiveness of ultrasound and anthropometry in detecting low muscle mass across different weight categories and clinical backgrounds.

Is the project transferable to other care settings / geographical regions?

The project is certainly transferable to other geographical regions in patients with IBD, cirrhosis or cancer, but also probably transferable to other clinical conditions also characterised by increased prevalence of reduced muscle mass. The project is also transferable to other care settings where the need for muscle mass assessment is high due to high prevalence of sarcopenia or malnutrition (e.g. rehabilitation centres, care homes), as it will provide the ability to estimate muscle mass with easily applied, rapid and reliable methods.

X

Please tick to confirm the PEN letter of endorsement is attached.
Incomplete submissions will not be considered.

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