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Inclusion of the Neutrophil-to-Lymphocyte Ratio may improve GLIM-based risk stratification in hospitalized medical patients: data from the SIMI-NUTRO cohort

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Background

Disease-related malnutrition (DRM) with inflammation represents a condition in which the underlying disease is associated with systemic inflammatory activation, contributing to increased energy expenditure, catabolism, and impaired anabolic response. The added value of laboratory biomarkers of inflammation in GLIM-defined malnutrition remains poorly explored. The neutrophil-to-lymphocyte ratio (NLR), a low-cost and routinely available marker derived from complete blood count, has emerged as a potential indicator of systemic inflammation. In this light, we aimed to evaluate whether systemic inflammation, assessed by NLR, C-reactive protein (CRP), and platelet-to-lymphocyte ratio (PLR), may improve GLIM-based risk stratification for infectious complications and length of hospital stay (LOS) in hospitalized medical patients.

Methods

This study represents a subanalysis of the SIMI-NUTRO multicenter observational cohort conducted across 16 Internal Medicine wards in Italy. The independent Research Centre of

SIMI (CRIS) approved the study. Malnutrition was diagnosed according to GLIM criteria. Inflammation was evaluated using NLR (≥ 3), C-reactive protein (>0.5 mg/dL) and PLR (>180). Patients were classified into three groups: Group 0 (GLIM negative), Group 1 (GLIM positive and $\text{NLR} < 3$) and Group 2 (GLIM positive and $\text{NLR} \geq 3$). Similar combined stratifications using GLIM-defined malnutrition with CRP (GLIM/CRP) and with PLR (GLIM/PLR) were also explored for comparative analyses. Outcomes were in-hospital infectious complications and LOS.

Results

Mean age was 68.7 ± 16.3 years, and 51.7% were female. Malnourished patients showed higher NLR ($p = 0.021$), PLR ($p = 0.007$) and CRP ($p = 0.002$). Patients in Group 2 (GLIM-positive with $\text{NLR} \geq 3$) had higher rates of infectious complications compared with Group 1 and Group 0 (21.6% vs 5.8% vs 4.6%; $p = 0.001$). Length of hospital stay was significantly different across groups, being longer in Group 2 compared with Group 1 and Group 0 [11.5 (8.25–15) vs 6 (5–10) vs 8 (6–13) days; $p = 0.001$].

In multivariate analysis, Group 2 remained independently associated with infectious complications (OR 4.28, 95% CI 2.18–8.38; $p = 0.001$) and prolonged LOS (OR 1.98, 95% CI 1.19–3.28; $p = 0.009$). Both GLIM-defined malnutrition and NLR were independently associated with infectious outcomes. CRP and PLR-based models showed weaker associations.

Conclusions

In hospitalized Internal Medicine patients, the combination of GLIM-defined malnutrition and elevated NLR identifies a subgroup at higher risk of adverse clinical outcomes. The addition of NLR to GLIM assessment improves risk stratification compared with GLIM alone. Given its low cost and wide availability, NLR represents a practical tool to integrate inflammatory assessment into routine nutritional evaluation.

IMPACT OF GLP-1 RECEPTOR AGONISTS AND DUAL GIP/GLP-1 RECEPTOR AGONISTS IN REAL-WORLD OBESITY MANAGEMENT. Preliminary clinical observation by the Local Health Authority (ASLVC)

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BACKGROUND AND OBJECTIVES

Obesity is increasingly recognized as a chronic, relapsing metabolic disease driven by complex neuroendocrine dysregulation rather than an increased caloric intake. The introduction into clinical practice of glucagon-like peptide-1 (GLP-1) receptor agonists and dual glucose-dependent insulinotropic polypeptide (GIP)/GLP-1 receptor agonists has catalyzed a fundamental paradigm shift, offering a new pharmacological tool that rivals bariatric surgery in its metabolic impact. While randomized controlled trials (RCTs) have established a high floor for efficacy, real-world data (RWD) remains essential for validating these outcomes within the heterogeneous and medically complex populations encountered in clinical practice. Such data provides a critical perspective into how socioeconomic variables, varying adherence levels, and long-term behavioral patterns influence treatment durability.

The primary objective of this analysis was to evaluate the real-world clinical effectiveness of Semaglutide and Tirzepatide when integrated into a structured, multidisciplinary nutritional therapy framework. We sought to analyze how these incretin mimetics modulate body composition and biochemical markers outside the rigid confines of trial protocols. Assessing these multi-dimensional outcomes necessitates a rigorous methodological design capable of tracking the intersection of pharmacotherapy, metabolic health, and lifestyle synergy.

MATERIALS AND METHODS

The study was founded on a strategic multidisciplinary model, predicated on the understanding that the efficacy of GLP-1 and GIP/GLP-1 receptor agonists is optimized when paired with precise nutritional intervention and regular monitoring of body composition.. This approach aims to maximize fat mass reduction while mitigating the loss of metabolically active tissue. The study cohort comprised 87 patients (n=87) referred to our complex obesity unit. Mean age was 56.3 ± 13.2 years and a female distribution 56.3%.

The intervention protocol mandated the prescription of a personalized nutritional plan (mean caloric intake of 1560 ± 221 kcal/day) in addition to the pharmacological therapy with Tirzepatide or Semaglutide. Clinical progress was monitored through the assessment of

anthropometric measurements (weight, BMI, waist circumference) at the beginning, after 6 months and at 12 months . Central to our evaluation was the use of Bioelectrical Impedance Analysis (BIA) to track the changes in Fat Mass (FM), Fat-Free Mass (FFM), Body Cell Mass (BCM), and Phase Angle. Biochemical analysis were assessed longitudinally, including Fasting Glucose, HbA1c, a complete Lipid Panel (Total Cholesterol, HDL, Triglycerides), Liver Function (ALT, GGT), Renal Function (eGFR), and Vitamin D3 levels. Furthermore, lifestyle variables—specifically dietary adherence and physical activity—were systematically recorded to evaluate the pragmatic challenges of real-world weight management.

RESULTS

The baseline characteristics of the registry participants underscore a population with a profound metabolic burden, characterized by Class III obesity and significant glycemic impairment. This high cardiovascular and metabolic risk profile served as the clinical baseline against which the longitudinal efficacy of Semaglutide and Tirzepatide was measured. At entry, the cohort exhibited a mean weight of 117.7 ± 22.8 kg, a BMI of 43.8 ± 7.1 kg/m², and an average waist circumference of 125.4 ± 14.8 cm. Glycemic markers further highlighted the severity of the cohort's metabolic state, with mean Fasting Glucose at 124.0 ± 55.5 mg/dL and HbA1c levels of 47.7 ± 15.9 mmol/mol.

Analysis of the six-month outcomes (T6, n=31) revealed substantial clinical improvement. Patients achieved a mean weight loss of -10.0 ± 8.4 kg, representing an $-8.5\% \pm 6.3\%$ reduction from baseline. Corresponding reductions in BMI and waist circumference were observed, suggesting a loss in visceral adiposity. Crucially, serial BIA monitoring during this period was utilized to ensure the "quality" of weight loss; the data suggests that the pharmacological intervention, combined with nutritional support, targeted Fat Mass (FM) reduction while aiming to preserve Body Cell Mass (BCM) and cellular integrity as indicated by stable Phase Angle measurements.

Long-term effectiveness was assessed at the 12 month interval (T12, n=14). Despite this, the cumulative weight loss remained significant and progressive, reaching -15.1 ± 13.4 kg ($-13.0\% \pm 9.6\%$). This sustained weight loss was accompanied by a marked optimization of the biochemical profile, specifically regarding stabilized glycemic control and improved lipid parameters.

The lifestyle data derived from the registry reflects the inherent complexities of real-world patient behavior. High or good dietary adherence was achieved by 44.2% of the cohort, while only 31.7% maintained an active or moderate level of physical activity. That significant and sustained weight loss was achieved despite these behavioral hurdles underscores the potent metabolic "push" provided by these pharmacological agents. The results suggest that the neuroendocrine modulation provided by Tirzepatide and Semaglutide can effectively overcome sub-optimal lifestyle adherence, though the integrated model remains the clinical ideal.

CONCLUSIONS

The findings from our data seems to provide evidence for the real-world efficacy of the pharmacological-nutritional model. The data seems demonstrate that GLP-1 and dual GIP/GLP-1 receptor agonists, specifically Semaglutide and Tirzepatide, are the primary drivers of significant and sustained weight loss and metabolic optimization in patients with severe obesity. On initial examination these agents seem to facilitate "surgical-like" results within a multidisciplinary framework, addressing both overweight and biochemical dysfunction.

Given the sustained reductions in weight and the preservation of metabolic quality evidenced by BIA metrics, this integrated approach is strongly recommended in the clinical practice. While medication represents a powerful tool, proper nutritional education and targeted dietary strategies remain essential to consolidate results over time and manage side effects that could compromise adherence to pharmacological therapy. The registry data confirms that when high-potency incretin mimetics are paired with structured metabolic monitoring and nutritional therapy, they provide an innovative and powerful support for managing complex obesity and its associated comorbidities.

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Serum lipocalin-2 and inflammatory cytokines are associated with anorexia and muscle wasting in patients with gastrointestinal cancer

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Introduction: Cancer-associated anorexia and cachexia are frequent and debilitating complications of several malignancies, largely sustained by chronic systemic inflammation and disrupted metabolic signaling. Lipocalin 2 (LCN2) has been implicated in immune-metabolic integration and central appetite control, however data in cancer patients are limited. This study aimed to assess the circulating levels of LCN2 in patients with gastrointestinal cancers (GI) compared with controls and to evaluate their association with anorexia, levels of systemic inflammatory cytokines as well as with body weight change and level of muscularity, i.e. main clinical features of cachexia.

Methods: GI patients naïve to treatments and controls were enrolled. Anorexia was diagnosed by the FAACT score (≤ 30). Serum LCN2 concentrations were measured by ELISA. Serum levels of cytokines (IL-6, IL-8, IL-10, IL-15, IL-18, and TNF- α) were assessed using a multiplex xMAP assay. Clinical, nutritional, and body composition parameters assessed by CT-scan were collected, and association(s) between LCN2 and inflammatory markers were analyzed.

Results: We enrolled 28 GI patients and 10 controls. Anorexia was diagnosed in 50% of GI patients. Serum LCN2 concentrations were higher in patients with GI vs controls ($p < 0.001$). Cancer patients showed increased circulating levels of IL-6, IL-8, IL-15, and TNF- α ($p < 0.05$) with respect to controls. The LCN2 levels showed strong positive correlations with pro-inflammatory cytokines, particularly IL-6 ($\rho = 0.809$; $p < 0.001$) and IL-8 ($\rho = 0.790$; $p < 0.001$). No significant differences in LCN2 levels were reached between patients with anorexia vs those without, while anorexic patients showed higher LCN2 levels vs controls ($p = 0.003$). Serum LCN2 levels were higher in patients with body weight loss compared with weight-stable patients ($p = 0.031$) and with respect to controls ($p < 0.001$). When combining the feature of anorexia with body weight loss, LCN2 levels were found higher compared to the feature of no anorexia and body weight stable ($p = 0.046$). In addition, LCN2 levels resulted higher in patients presenting low muscle mass and body weight loss compared with those with body weight stable and higher muscularity ($p = 0.028$).

Conclusions: Serum LCN2 was elevated in GI patients and strongly correlated with pro-inflammatory cytokines. LCN2 was higher in patients with weight loss and low muscularity, and in those with anorexia compared to controls. Overall, LCN2 reflected the combined burden of inflammation and cachexia-related features in gastrointestinal cancer.

Exploring miRNA expression pattern in skeletal muscles of patients with a new diagnosis of breast cancer

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Introduction: Skeletal muscle (SM) changes are an important prognostic factor in women diagnosed with breast cancer (BC). SM wasting involves disruptions in metabolic pathways, increased apoptosis, and impaired regeneration, all closely linked to inflammation. Several studies have shown that microRNAs (miRNAs) are involved in SM homeostasis, but their specific roles in cancer-related SM alterations remain unclear.

Our study aims to investigate the association between SM-derived miRNA expression and body composition parameters, including muscularity levels, in a cohort of newly diagnosed BC patients (BCP).

Methods: SM biopsies were collected from newly diagnosed BCP (n=24) and controls (C, n=6) at the time of surgery. Relative expression levels of miRNAs were assessed by RT-qPCR. BCP were stratified by fat-free mass index (FFMI, kg/m²), estimated by bioelectrical impedance analysis, into low (LMM) and high muscle mass (HMM) groups.

Results: In SM samples, we found an upregulation of miR-29a, -29b, -133a, and -206 in BCP compared to C (p<0.05). These miRNAs were also significantly upregulated according to BMI categories, particularly in BCP with BMI (kg/m²) ≥ 25 compared to C (p<0.05).

Importantly, when stratifying BCP by FFMI, SM-derived miR-206 was significantly lower in BCP with LMM vs HMM (p<0.05), with additional differences observed when FFMI was considered in combination with BC molecular subtypes. Specifically, miR-206 was significantly downregulated in BCP with luminal-B (LUM-B) and LMM vs LUM-B patients with HMM (p<0.05). Moreover, relative expression levels of mir-206 were positively correlated with FFMI values in BCP (p=0.031; r=0.440).

Conclusion: Our preliminary findings suggest an association between SM-derived miR-206 and SM alterations in newly diagnosed BCP. Further studies are needed to validate these findings and elucidate their functional role.

INFLAMMATION-DRIVEN ANOREXIA IN MYELOFIBROSIS: EFFECTS OF RUXOLITINIB ON CYTOKINE PROFILE, GDF-15, AND BODY COMPOSITION

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Rationale:

Myelofibrosis (MF) is a BCR-ABL-negative myeloproliferative neoplasm characterized by clonal hematopoietic stem cell proliferation, progressive bone marrow fibrosis, extramedullary haematopoiesis and splenomegaly. MF is frequently complicated by cachexia, a multifactorial syndrome characterized by involuntary weight loss, skeletal muscle depletion, functional impairment, and reduced quality of life. In this context, anorexia represents a central but still incompletely understood clinical feature. Early satiety due to splenomegaly is traditionally considered the main determinant of appetite loss; however, emerging evidence suggests a potential role of inflammatory pathways. This study aimed to characterize the nutritional and inflammatory profile associated with anorexia in patients with myelofibrosis and to evaluate the effects of ruxolitinib, a JAK1/2 inhibitor used for disease treatment, on body composition and metabolic changes occurring in MF.

Methods:

We conducted a prospective observational study including 25 patients with MF, with baseline and 12-month (T1) follow-up evaluations. Anorexia was defined as a Functional Assessment of Anorexia/Cachexia Therapy (FAACT) score ≤ 30 . Malnutrition was evaluated with the Global Leadership Initiative on Malnutrition (GLIM) criteria. Body composition was estimated with Bioelectrical Impedance analysis (BIA). Symptom burden was assessed using the MPN10 score, and functional status was evaluated according to the ECOG performance scale. Spleen size was measured by abdominal ultrasonography. Circulating cytokines were quantified using a multiplex magnetic Luminex assay.

Results:

At baseline, patients had a mean age of 64.2 ± 12.7 years and 60% were male. Anorexia was present in 8 of 25 patients (32%). Compared with non-anorexic patients, those with anorexia were older ($p=0.014$), had lower hemoglobin levels ($p=0.016$), higher C-reactive protein (CRP) levels ($p=0.042$), greater weight loss ($p=0.023$), worse ECOG performance status ($p=0.030$), and higher symptom burden (MPN10, $p=0.002$). Splenomegaly was present in 96% of patients, but spleen diameter did not differ significantly between anorexic and non-anorexic

groups (16 ± 2 vs 17.5 ± 0.7 cm; $p=0.401$), nor was it associated with FAACT score ($p=0.673$). Among inflammatory mediators, serum tumor necrosis factor- α (TNF- α) was significantly higher in anorexic patients ($p=0.043$), whereas no differences were observed for circulating IL-1 β , IL-6, or IL-10. Moreover, FAACT score showed a significant inverse correlation with both growth differentiation factor-15 (GDF-15) ($p=0.027$) and CRP ($p=0.042$). After 12 months of ruxolitinib treatment, reduction in systemic inflammation was documented by a decrease in NLR (4.87 ± 2.1 vs 3.8 ± 2.55 ; $p=0.004$), along with a significant decline in circulating cytokines, including IL-1 β ($p=0.03$), IL-6 ($p=0.027$), IL-10 ($p=0.002$), TNF- α ($p=0.0001$), and TGF- β ($p=0.001$), whereas GDF-15 levels remained unchanged. Splenic size significantly decreased after 12 months of treatment, with a reduction in spleen diameter from 18.9 ± 3.0 cm at baseline to 16.36 ± 2.6 cm at T1 ($p=0.01$). Both FAACT score and VAS significantly improved (respectively 34.7 ± 6.95 vs 40.65 ± 3.71 ; $p=0.01$; 6.7 ± 1.7 vs 7.8 ± 1.3 ; $p=0.02$). In parallel, nutritional status improved, as reflected by a marked reduction in malnutrition prevalence according to GLIM criteria (80% vs 8%; $p=0.001$) and an increase in BMI (23.9 ± 2.8 vs 26.3 ± 3.44 kg/m²; $p=0.001$). Body composition analysis showed a significant increase in fat mass (15.58 ± 5.99 vs 22.57 ± 7.03 kg; $p=0.001$), while fat-free mass, fat-free mass index, and skeletal muscle mass remained stable. Phase angle significantly improved over time (4.7 ± 0.8 vs 5.0 ± 0.78 ; $p=0.001$).

Conclusion: Ruxolitinib therapy was associated with a significant reduction in circulating cytokines, alongside marked improvements in appetite, nutritional status, and body composition. These findings support the need to downsize the role traditionally attributed to splenomegaly as a mechanical driver of anorexia, highlighting instead a broader inflammatory–metabolic network. While spleen enlargement may still contribute, systemic inflammation emerges as a key determinant of anorexia in MF, with its modulation through JAK–STAT inhibition closely linked to clinical and metabolic improvements.

Circulating miRNAs profiles and skeletal muscle protein alterations in patients with gastrointestinal cancer

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Introduction: Cancer cachexia (CC) is characterized by skeletal muscle (SM) wasting driven by alterations in protein turnover and muscle homeostasis. MicroRNAs (miRNAs) may contribute to these processes through multiple signaling pathways. We investigated whether circulating miRNAs associated with CC and low muscle mass may be linked to distinct molecular pathways and protein alterations in SM of patients with gastrointestinal (GI) cancer.

Methods: Fifty-four treatment-naïve patients with GI cancer and 15 controls were studied. CC was defined according to Fearon criteria. SM mass was assessed using the CT-derived L3 SM index, classifying patients as high (HMM) or low muscle mass (LMM). Circulating miR-29b and miR-133a were quantified by RT-qPCR. miRNA targets were identified using miRTarBase, TargetScanHuman, and miRWalk, followed by functional enrichment analysis. SM biopsies from 28 patients and 14 controls were analyzed by Western blot for proteins involved in anabolic signaling, proteolysis, and muscle phenotype.

Results: Compared with controls, patient with GI cancer had higher circulating miR-29b ($p<0.001$), whereas miR-133a was significantly lower ($p=0.007$). miR-29b was higher in cachectic vs non-cachectic patients ($p=0.003$), while miR-133a was reduced only LMM vs controls ($p=0.007$). Functional enrichment of miRNA-associated targets highlighted biological processes related to SM homeostasis and protein turnover. At the protein level, p-p70S6K/p70S6K and p-4EBP1/4EBP1 ratios were lower (both $p<0.05$), whereas FBXO32/Atrogin-1 ($p=0.037$) and MuRF1 ($p=0.042$) were increased in CC vs controls. LMM was characterized by lower MYH2 expression than HMM ($p=0.036$).

Conclusions: These preliminary findings suggest that circulating miR-29b and miR-133a may capture distinct features of muscle wasting in GI cancer. Their associations with alterations in muscle protein turnover and structural phenotype raise the possibility that circulating miRNA profiles may reflect different biological processes associated with CC and muscle depletion. Further studies are warranted to clarify their relationship with tissue-level mechanisms of cancer-associated muscle wasting.

Concordance and prognostic performance of nutritional, functional, and body-composition assessment tools in patients hospitalized for acute respiratory failure: a prospective cohort study

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Background:

Malnutrition and sarcopenia are common in older patients hospitalized for acute respiratory failure (ARF) and are associated with adverse outcomes. Multiple screening tools exist, but their agreement and comparative predictive performance in this specific setting are unclear.

Methods:

We conducted a prospective, single-center cohort study of 108 consecutive patients admitted for acute or acute-on-chronic respiratory failure to the Unit of Internal Medicine or the Unit of Pulmonology of the “V. Cervello” Hospital, in Palermo (Italy). The study protocol, including the pre-specified comparison of nutritional/sarcopenia screening tools and the

primary composite outcome, was approved by the local Ethics Committee prior to patient enrollment. Nutritional and sarcopenia status was assessed at admission using the Malnutrition Screening Tool (MST), Mini Nutritional Assessment (MNA), Strength – Assistance in walking – Rising from a chair – Climbing stairs – Falls questionnaire (SARC-F), bioelectrical impedance analysis (BIA – phase angle and skeletal muscle index, SMI), handgrip strength, calf circumference, and body mass index (BMI), applying sex-specific cut-offs where recommended (EWGSOP2). The primary outcome was a composite of non-routine discharge (in-hospital death, hospice referral, or other non-ordinary discharge disposition). Predictive performance was assessed with receiver operating characteristic (ROC) curves; pairwise agreement between tools with Cohen's kappa; and independent association with the outcome using logistic regression adjusted for age and Charlson Comorbidity Index (CCI).

Findings:

The primary composite outcome (in-hospital death, hospice referral, or other non-routine discharge disposition) occurred in 25/108 patients (23.1%). Area under the ROC curve (AUC) ranged from 0.47 (SMI) to 0.82 (MNA). Pairwise agreement between tools was generally poor to fair (kappa mostly <0.35). In logistic regression adjusted for both age and Charlson Comorbidity Index (CCI), MNA (adjusted odds ratio [aOR] 4.78, 95% CI 1.46–15.62, $p=0.010$) and MST (aOR 4.47, 95% CI 1.49–13.36, $p=0.007$) were independently associated with the outcome; SARC-F and BMI showed comparable point estimates but did not reach significance after full adjustment. Among additional biomarkers, lower serum albumin (aOR 0.47, $p=0.007$), lower PaCO₂ (aOR 0.49, $p=0.017$), lower HCO₃⁻ (aOR 0.56, $p=0.028$) and lower BCMI (aOR 0.40, $p=0.046$) were independently associated with the outcome.

Conclusion:

In this cohort of patients with acute respiratory failure, commonly used nutritional, functional, and sarcopenia assessment tools showed limited mutual agreement. MNA provided the strongest discrimination for adverse discharge disposition, while both MNA and MST were independently associated with the pre-specified composite outcome after adjustment for age and comorbidity burden. These findings, generated in a relatively small single-center cohort, support the multidimensional nature of nutritional vulnerability in acute respiratory failure and warrant external validation.

Keywords

malnutrition; sarcopenia; respiratory insufficiency; bioelectrical impedance; nutritional screening; MST; MNA; SARC-F

Sarcopenia Risk and Low Protein Intake in Older Adults in General Practice: a Pilot Study with SARC-F and Protein Screener 55+

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Background & aim: Sarcopenia is a progressive and generalized skeletal muscle disease associated with an increased likelihood of falls, fractures, physical disability and mortality. The revised European consensus (EWGSOP2) recommends case-finding with the SARC-F questionnaire. In older adults, international recommendations indicate a protein intake of at least 1.0–1.2 g/kg body weight/day, yet about half of people aged ≥ 65 years have an intake ≤ 1.0 g/kg/day. The Protein Screener 55+ (Pro55+) is a short food frequency questionnaire that estimates the probability of a protein intake ≤ 1.0 g/kg adjusted body weight/day. General practice is the ideal setting for early identification of both conditions, but time constraints and the lack of dedicated instruments limit routine screening. The aim of the study was to assess the applicability of a combined screening of sarcopenia risk and low protein intake in older patients attending a general practice clinic, and to describe the frequency and joint distribution of the two risks.

Methods: A pilot observational cross-sectional study was conducted in a general practice clinic of the Italian National Health Service [Rome] over six weeks, between May and September 2026. Patients aged ≥ 65 years, able to walk independently and to answer the questionnaires, were recruited during routine scheduled visits or prescription renewals. Exclusion criteria were active cancer, severe organ failure, chronic bed rest, cognitive impairment (MMSE < 24 , corrected for age and education) and ongoing artificial nutrition. Body weight and height were measured and body mass index (BMI) was calculated. Sarcopenia risk was assessed with the validated Italian version of the SARC-F (score ≥ 4 = positive). The probability of low protein intake was estimated with the official online version of the Pro55+, administered by interview. All assessments were performed in a single visit. Data were analysed descriptively and expressed as mean $\pm$ standard deviation, range, or number and percentage.

Results: A total of 20 patients (10 women and 10 men) were enrolled. Mean age was 74.4 ± 6.6 years (range 66–88) and mean BMI was 24.8 ± 3.4 kg/m² (range 19.9–31.3); 6 patients (30.0%) had a BMI < 22 kg/m². Mean SARC-F score was 3.2 ± 2.2 (range 0–7), and 9 patients (45.0%) screened positive: 5/10 women (50.0%) and 4/10 men (40.0%). Positivity increased with age, from 2/12 patients (16.7%) aged 65–74 years to 7/8 patients (87.5%) aged ≥ 75 years; mean age was 80.3 years in positive and 69.5 years in negative patients (Figure 1). The Pro55+ identified 11 patients (55.0%) with a high probability of protein intake ≤ 1.0 g/kg/day: 5/10 women (50.0%) and 6/10 men (60.0%) (Figure 2). Among SARC-F-positive patients, 7/9

(77.8%) were also at risk of low protein intake, compared with 4/11 (36.4%) SARC-F-negative patients. Overall, 7 patients (35.0%) screened positive on both questionnaires and 7 (35.0%) on neither (Figure 3).

Conclusions: Combined screening with SARC-F and Pro55+ was applicable in general practice without dedicated equipment and identified a relevant proportion of older patients at risk of sarcopenia and of low protein intake, with frequent overlap between the two risks. Given the small convenience sample, the descriptive design and the lack of validation of the Pro55+ in the Italian population, these findings need confirmation in larger studies including muscle strength assessment. Screening muscle risk and protein intake provides complementary information and may help general practitioners identify early the patients who need nutritional intervention, in collaboration with healthcare professionals specialized in nutrition.