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CONUT Score and CT-Derived Body Composition Parameters Predict Outcomes in Older Adults with AML and MDS Treated with Low-Intensity Therapy

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Abstract

Malnutrition is highly prevalent among older adults with acute myeloid leukemia (AML) and myelodysplastic neoplasms (MDS) and may affect treatment outcomes, yet prognostic value of the CONtrolling NUTritional status (CONUT) score and computed tomography (CT)-derived body composition in patients receiving low-intensity therapy remains poorly characterized. We performed a retrospective cohort study including patients older than 55 years with AML, and/or MDS, treated with azacitidine or low-dose cytarabine, with or without venetoclax. Pre-treatment CONUT score and body mass index were obtained, and body composition was assessed by CT at L3 level when available, deriving skeletal muscle index (SMI), visceral adipose tissue index (VATI), and subcutaneous adipose tissue index (SATI). Outcomes were overall survival (OS) and 90-day cumulative incidence of febrile neutropenia (FN). Among 54 patients (median age 70 years), median OS was 15.2 months. CONUT score > 5 was associated with inferior OS (HR 2.47; p = 0.012), driven mainly by hypoalbuminemia. Among 27 patients with CT data, low SMI (HR 2.94; p = 0.036) and low SATI (HR 4.20; p = 0.014) predicted worse survival, while high SATI paradoxically increased FN risk (HR 4.69; p = 0.004). Pre-treatment nutritional and body composition assessment identifies patients at higher risk of adverse outcomes and supports routine nutritional evaluation in this population.

Introduction

Malnutrition is highly prevalent among elderly patients, affecting up to 80% of this population[1]. This is particularly relevant in acute myeloid leukemia (AML) and myelodysplastic neoplasms (MDS), which predominantly affect older adults, with a median age at diagnosis of approximately 69 years[2]. In a cohort of older adults with newly diagnosed hematologic malignancies—more than half of whom had AML or MDS—malnutrition or risk of malnutrition was identified in over 50% of patients and was independently associated with inferior overall survival (OS)[3].

The CONtrolling NUTritional status (CONUT) score[4], an automated index derived from serum albumin, cholesterol, and lymphocyte count, has emerged as a prognostic biomarker in oncology. A recent meta-analysis including patients with hematologic malignancies demonstrated that elevated CONUT scores are independently associated with poorer OS and progression-free survival (PFS); however, only a limited number of studies included patients with AML or MDS, leaving its prognostic value in these diseases insufficiently characterized[5].

Furthermore, body composition parameters have demonstrated prognostic value in hematologic malignancies, as alterations in adiposity[6] and skeletal muscle mass[7]—measured using different assessment methods—have been associated with inferior outcomes.

In recent years, the therapeutic landscape of AML and MDS has shifted toward low-intensity regimens for older and unfit patients. Following the AZA-001[8], VIALE-A[9], and VIALE-C[10] trials, combinations of azacitidine or low-dose cytarabine (LDAC) with or without the BCL-2 inhibitor venetoclax have become

the standard of care for patients ineligible for intensive chemotherapy. In this vulnerable population, identifying nutritional and body composition factors that may influence treatment tolerance and outcomes is increasingly important.

This study aimed to evaluate retrospective clinical and laboratory markers of malnutrition assessed using the CONUT score, as well as body composition by computed tomography, and to determine their association with treatment-related complications and mortality in patients with AML and MDS receiving low-intensity regimens.

Material and methods

This is a retrospective observational cohort study conducted at a referral care center in Mexico City. We included patients older than 55 years with high-risk MDS (IPSS-R ≥ 3.5 points), AML, or MDS/AML, as defined by the International Consensus Classification (ICC)[11], diagnosed between January 2015 and June 2023, who were considered ineligible for intensive chemotherapy at the treating physician's discretion, and therefore received treatment with azacitidine or LDAC, either as monotherapy, or in combination with venetoclax.

Nutritional assessment, malnutrition, and body composition definitions

Nutritional risk and body composition assessments were retrospectively collected if performed prior to or within 15 days of treatment initiation.

Controlling Nutritional Status (CONUT) score[12] and body mass index (BMI) values prior to initiating treatment were extracted from medical records. Detailed scoring criteria are provided in **Table S1**.

Body composition was assessed in patients with a non-contrast abdominal CT at diagnosis. Single-slice images at the L3 vertebral level were analyzed using Horos (v4.0.1), as previously described[13], with tissue compartments identified by Hounsfield unit (HU) thresholds: subcutaneous adipose tissue (− 190 to − 30 HU), visceral adipose tissue (− 150 to − 50 HU), and skeletal muscle (− 29 to + 150 HU) (Fig. 1). Tissue areas were normalized to height to derive the skeletal muscle index (SMI), visceral adipose tissue index (VATI), and subcutaneous adipose tissue index (SATI), expressed in cm^2/m^2. Receiver operating characteristic (ROC) curve analysis was performed to determine optimal cutoffs for SMI, VATI, and SATI in relation to predefined outcomes.

Outcomes

The primary outcome was OS. OS was defined as the time from diagnosis to death from any cause or last follow-up. Secondary outcome was 90-day cumulative incidence of febrile neutropenia (FN).

Statistical considerations

Statistical analyses were performed using RStudio (RStudio Team, Boston, MA, USA) within R (R Foundation for Statistical Computing, Vienna, Austria). Continuous variables are presented as medians with interquartile ranges (IQR), and categorical variables as frequencies. Group comparisons were performed using the Chi-square test and Mann–Whitney U test, as appropriate, and correlations were assessed using Pearson's correlation coefficient. Survival outcomes were analyzed using the Kaplan–Meier method. Risk was evaluated using logistic regression for dichotomous outcomes, reported as odds ratios (OR), and Cox proportional hazards models for time-to-event outcomes, reported as hazard ratios (HR). Statistical significance was defined as $p < 0.05$.

This study was approved by the Ethics committee of Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán (Protocol ID: HEM-6240-26-26-1), in compliance with the standards outlined in the Declaration of Helsinki. The Institutional Review Board (IRB) granted a waiver of the informed consent requirement.

Results

Baseline characteristics

A total of 54 patients were included during the study period. Median age at diagnosis was 70 years (IQR, 65.2–77). Additionally, 33.3% (n = 18) had an ECOG PS score > 2, and the Charlson comorbidity index had a median of 6 (IQR, 2–10). AML was the most common diagnosis (53%), followed by MDS (35%), and MDS/AML (11.1%). The most commonly administered treatment was azacitidine plus venetoclax (42.6%, n = 23), followed by low-dose cytarabine (LDAC) plus venetoclax (22.2%, n = 12). Baseline characteristics are summarized in Table 1.

Table 1
Baseline characteristics of the cohort.

Age, years	**n = 54**
	Median (IQR) or n (%)
	70 (65.2–77)
Sex	29 (53.7%)
Male	25 (46.3%)
Female sex	
ECOG performance status score	13 (24.1)
0–1	41 (75.9)
≥ 2	
Charlson comorbidity index score	6 (2–10)
Diagnosis	29 (53.7%)
AML	19 (35.2%)
MDS	6 (11.1%)
MDS / AML	
Cytogenetics	13 (24.1%)
Normal	14 (25.9%)
Complex / Monosomal	
Mutational analysis	26 (48.1%)
TP53	6 (31.6%)
IDH 1/2	5 (26.3%)
DNMT3A	5 (26.3%)
RUNX1	4 (21.1%)
NPM1	5 (18.5%)
FLT3	3 (15.8%)
BCOR1	3 (11.5%)
TET2	2 (10.5%)

AML=acute myeloid leukemia, MDS=myelodysplastic syndrome, LDAC = low-dose cytarabine, CT=computed tomography, SMI=skeletal muscle index, VATI=visceral adipose tissue index, SATI=subcutaneous adipose tissue index

Age, years	**n = 54** **Median (IQR) or n (%)**
	70 (65.2–77)
Treatment received	23 (42.6%)
Azacitidine + venetoclax	16 (29.6%)
Azacitidine	12 (22.2%)
LDAC + venetoclax	3 (5.6%)
LDAC	
BMI, kg/m^2	24.7 (15.11–35.16)
Baseline CT scan	26 (48.1%)
SMI, cm^2/m^2	33.5 (18.14–62.31)
VATI, cm^2/m^2	45.27 (9.39-107.06)
SATI, cm^2/m^2	64.9 (16.13–162.9)
AML=acute myeloid leukemia, MDS=myelodysplastic syndrome, LDAC = low-dose cytarabine, CT=computed tomography, SMI=skeletal muscle index, VATI=visceral adipose tissue index, SATI=subcutaneous adipose tissue index	

Nutritional assessment

An abnormal BMI was observed in 50% (n = 27, 3 patients with a BMI < 18.5 kg/m^2, and 24 with a BMI ≥ 25 kg/m^2), with a median BMI of 24.7 kg/m^2 (IQR, 15.11–35.16). Median CONUT score was 5 (IQR, 2.25-6). The CONUT score distribution and its components are shown in Table 2.

Table 2
Distribution of the CONUT score and its components.

CONUT score, median (IQR)	**n = 54**
	4 (2.25-6)
Albumin score, n (%)	33 (61.1)
0 (≥ 3.5 g/dl)	13 (24.1)
2 (3-3.49 g/dl)	6 (11.1)
4 (2.5–2.99 g/dl)	2 (3.7)
6 (< 2.5 g/dl)	
Total cholesterol score, n (%)	13 (24.1)
0 (> 180 mg/dl)	9 (16.7)
1 (140–180 mg/dl)	12 (22.2)
2 (100–139 mg/dl)	20 (37)
3 (< 100 mg/dl)	
Total lymphocytes score, n (%)	20 (37)
0 (> 1600)	4 (7.4)
1 (1200–1599)	11 (20.4)
2 (800–1199)	19 (35.2)
3 (< 800)	

Body composition by computed tomography was available in 27 patients (50%). Median SMI was 29.88 cm^2/m^2 (IQR, 28.75–40.33), median VATI was 34.84 cm^2/m^2 (IQR, 31.01–58.45), and median SATI was 62.6 cm^2/m^2 (IQR, 36.25–79.35).

Survival

With a median follow-up of 23.2 months (95% CI, 14.7-NR), the median OS for the entire cohort was 15.2 months (95% CI, 8.0-17.9) (Fig. 2A). The estimated OS at 12 and 24 months was 56.5% (95% CI, 44.2–72.3) and 24.1% (95% CI, 13.5–42.9), respectively.

No significant differences in survival were observed according to BMI status. Median OS was 13.2 months (95% CI, 4.9-NR) in patients with abnormal BMI, and 15.5 months (95% CI, 11.2–29.5) in those with normal BMI (Fig. 2B). Estimated OS at 12 months was 51.2% vs 61.7%, and at 24 months 21.9% vs

25.7%, for abnormal and normal BMI groups, respectively. BMI was not significantly associated with OS in univariate analysis (HR 1.45, 95% CI, 0.73–2.86; p = 0.285) (Table 3).

Table 3
Overall survival across nutritional status subgroups.

		Median OS, months (95% CI)	*p* value	12-month OS, %	HR	95% CI	*p* value
Full cohort (n = 54)		15.2 (8.0-17.9)		56.5			
BMI	Abnormal BMI (n = 27)	13.2 (4.9-NR)	0.28	51.2	1.45	0.73–2.86	0.285
	Normal BMI (n = 27)	15.5 (11.2–29.5)		61.7			
CONUT score	> 5 (n = 16)	1.7 (1.2-NR)	0.01*	28.1	2.47	1.21–5.04	0.012*
	≤ 5 (n = 38)	14.5 (10.6–17.9)		63.8			
SMI	< 29.7 cm^2/m^2 (n = 13)	6.8 (1.9-NR)	0.027*	-	2.94	1.07–8.02	0.036*
	≥ 29.7 cm^2/m^2 (n = 14)	17.9 (5.1-NR)		64.3			
SATI	< 41.5 cm^2/m^2 (n = 9)	4.9 (2.3-NR)	0.007*	-	4.2	1.34–3.17	0.014*
	≥ 41.5 cm^2/m^2 (n = 18)	15.5 (13.3-NR)		72.2			
VATI	< 35.8 cm^2/m^2 (n = 15)	15.2 (5.1-NR)	0.55	56.6	0.75	0.3–1.9	0.548
	≥ 35.8 cm^2/m^2 (n = 12)	5.8 (2.8-NR)		41.7			

BMI=body mass index, SMI=skeletal muscle index, SATI=subcutaneous adipose tissue index, VATI=visceral adipose tissue index, HR=hazard ratio, OS=overall survival, HR=hazard ratio, CI=confidence interval

*Deemed as statistically significant

CONUT score

The CONUT score associated with mortality was > 5 points. Baseline characteristics were well balanced between CONUT groups. No significant differences were observed in age, Charlson comorbidity index, or ECOG performance status (**Table S2**).

Patients with a CONUT score > 5 showed worse OS compared to those with CONUT ≤ 5 (Fig. 2C). Median OS was 1.7 months (95% CI, 1.2-NR) in the CONUT > 5 group versus 14.5 months (95% CI, 10.6–17.9) in the CONUT ≤ 5 group. At 12 months, OS was 28.1% for patients with a CONUT score > 5, and 63.8% for CONUT ≤ 5. A CONUT > 5 was adversely associated with OS (HR 2.47, 95% CI, 1.21–5.04; p = 0.012) (Table 3).

When analyzing the albumin component of the CONUT score, patients were stratified into two groups: albumin ≥ 3 g/dL (n = 46) and albumin < 3 g/dL (n = 8). Patients with hypoalbuminemia (< 3 g/dL) had significantly worse survival outcomes (Fig. 2D). Median OS was 14.45 months (95% CI, 10.61–16.66) in patients with albumin ≥ 3 g/dL compared to 1.61 months (95% CI, 1.28-NR) in those with albumin < 3 g/dL. At 12 months, OS was 61.1% (95% CI, 47.6–78.5) in the albumin ≥ 3 g/dL group and 12.5% (95% CI, 2.0-78.2) in the albumin < 3 g/dL group. Low albumin was associated with a significantly increased risk of death (HR 2.65, 95% CI 1.14–6.18; p = 0.024). There were no significant differences between albumin groups in regards to age, Charlson comorbidity index, and ECOG performance status (**Table S3**). In contrast to albumin, neither cholesterol nor lymphocyte count showed a statistically significant association with survival (**Table S4, Figure S1**).

Body composition analysis

Among the 27 patients with available CT body composition data, optimal cutoffs were identified as 29.7 cm^2/m^2 for SMI, 41.5 cm^2/m^2 for SATI, and 35.8 cm^2/m^2 for VATI.

Patients with low SMI had shorter survival compared to those with high SMI (Fig. 2E). Median OS was 6.8 months (95% CI, 1.9-NR) in the low SMI group versus 17.9 months (95% CI, 5.1-NR) in the high SMI group. At 12 and 24 months, OS in the high SMI group was 64.3% and 40.2%, respectively. In Cox regression analysis, low SMI was associated with a significantly increased risk of death (HR 2.94, 95% CI, 1.07–8.02; p = 0.036) (Table 3).

Low SATI was significantly associated with worse survival (Fig. 2F). Median OS was 4.9 months (95% CI, 2.3-NR) in patients with low SATI compared to 15.5 months (95% CI, 13.3-NR) in those with high SATI. At 12 and 24 months, OS in the high SATI group was 72.2% and 27.5%, respectively. In Cox regression analysis, low SATI was associated with a significantly increased risk of death (HR 4.20, 95% CI, 1.34–13.17; p = 0.014) (Table 3).

No significant differences in survival were observed according to VATI (Fig. 2G). Median OS was 5.8 months (95% CI, 2.8-NR) in the high VATI group and 15.2 months (95% CI, 5.1-NR) in the low VATI group.

At 12 months, OS was 41.7% vs 56.6%, and at 24 months 20.8% vs not reached, for high and low VATI groups, respectively. VATI was not significantly associated with OS (HR 0.75, 95% CI, 0.3–1.9; p = 0.548) (Table 3).

Febrile neutropenia

FN cumulative incidence was 59.3% at 90 days (Fig. 3A). Patients with an abnormal BMI had a non-significant higher FN incidence (90-day: 70.4% vs. 48.1%; HR 1.82, 95% CI 0.90–3.70, p = 0.096) (Fig. 3B). Patients with CONUT > 5 did not show higher FN incidence (90-day: 66.7% vs. 54.5%; HR 1.77, 95% CI 0.88–3.57, p = 0.112) (Fig. 3C). In a subanalysis of patients with body composition analysis information available, SMI and VATI were not associated with higher FN incidence (Table 4, **Figure S2**). In contrast, high SATI (≥ 61.9 cm^2/m^2) was significantly associated with increased FN risk (HR 4.69, 95% CI 1.62–13.6, p = 0.004) (Fig. 3C), with notably higher early incidence (30-day: 78.6% vs. 30.8%).

Table 4
Febrile neutropenia cumulative incidence across subgroups

		90-day febrile neutropenia cumulative incidence	*p* value	HR	95% CI	*p* value
Full cohort (n = 54)		59.3%				
BMI	Abnormal BMI (n = 27)	70.4%	0.096	1.82	0.9–3.7	0.096
	Normal BMI (n = 27)	48.1%				
CONUT score	> 5 (n = 16)	68.8%	0.17	1.67	0.8–3.47	0.173
	≤ 5 (n = 38)	55.3%				
SMI	≥ 30 cm^2/m^2 (n = 13)	76.9%	0.61	1.26	0.52–3.1	0.603
	< 30 cm^2/m^2 (n = 14)	71.4%				
SATI	≥ 62 cm^2/m^2 (n = 13)	100%	0.002*	4.69	1.62–13.6	0.004*
	< 62 cm^2/m^2 (n = 14)	46.2%				
VATI	≥ 70 cm^2/m^2 (n = 5	100%	0.68	1.23	0.45–3.41	0.688
	< 70 cm^2/m^2 (n = 22)	68.2%				

BMI=body mass index, SMI=skeletal muscle index, SATI=subcutaneous adipose tissue index, VATI=visceral adipose tissue index, HR=hazard ratio, FN=febrile neutropenia

*Deemed as statistically significant

Discussion

In this retrospective cohort of older patients with AML and MDS receiving low-intensity regimens, we demonstrate that pre-treatment nutritional assessment using the CONUT score and CT-derived body composition parameters identifies patients at significantly higher risk of death. Specifically, a CONUT score > 5, hypoalbuminemia, low SMI, and low SATI were each associated with inferior OS. Furthermore, high SATI was paradoxically associated with an increased 90-day cumulative incidence of FN. BMI, in contrast, did not discriminate outcomes, underscoring the limitations of weight-based assessments in this population.

The prognostic relevance of the CONUT score in hematologic malignancies has been increasingly recognized. A meta-analysis of six studies including 1,811 patients with hematologic malignancies demonstrated that elevated CONUT scores are associated with worse OS and PFS[14]. More specifically, in patients with MDS and AML with myelodysplasia-related changes treated with azacitidine monotherapy, Sakurai et al. identified an optimal CONUT cutoff of ≥ 5 — identical to our threshold — and found that patients with high CONUT scores had markedly inferior one-year OS compared to those with low scores[15]. Our findings extend this observation to a broader population receiving contemporary venetoclax-based combinations alongside hypomethylating agents and LDAC, reinforcing the prognostic utility of CONUT across the evolving low-intensity treatment landscape. Similarly, in a retrospective study of 121 MDS patients, a CONUT score above four was associated with significantly shorter OS[16], and in MDS patients treated with decitabine, a CONUT cutoff of > 5.5 was identified as an independent prognostic factor alongside IPSS-R score and thrombocytopenia[17]. Taken together with our results, these data suggest that moderate-to-severe nutritional impairment — as captured by CONUT scores in the range of 5 to 6 — consistently identifies a high-risk subgroup of early mortality across different MDS and AML treatment contexts.

A notable finding of the present study was that the prognostic signal of the CONUT score appeared driven primarily by its albumin component, while cholesterol and lymphocyte count did not independently associate with survival. In the context of AML and MDS, disease-related cytopenias — particularly lymphopenia — can confound the lymphocyte component of the CONUT score, making it less reflective of nutritional status and more of disease burden per se. This limitation has been previously recognized; a simplified CONUT (sCONUT) that eliminates total lymphocyte count was developed and validated specifically in elderly AML patients, where both sCONUT and genetic risk group independently stratified OS on multivariable analysis[18]. Our findings provide empirical support for this concern, as lymphocyte count did not contribute meaningful prognostic information beyond albumin in our cohort. Regarding albumin, its prognostic role in AML and MDS is well-established. A multicenter retrospective study of 756 newly diagnosed AML patients found that lower baseline albumin was independently associated with a higher number of grade ≥ 3 treatment complications, as well as significantly higher 30- and 60-day mortality rates[19]. In MDS, hypoalbuminemia has been identified as an independent prognostic factor for OS and AML transformation across all IPSS risk groups[20]. Importantly, hypoalbuminemia should not be interpreted exclusively as a nutritional marker; serum albumin is also a well-recognized inflammatory biomarker and surrogate for comorbidity burden[21], and its reduction in AML and MDS likely reflects a composite of systemic inflammation, disease-driven catabolism, and impaired nutritional intake. Whether albumin-targeted nutritional intervention in this population translates into improved outcomes remains an open clinical question deserving prospective evaluation.

Regarding body composition, our results align with the growing evidence linking sarcopenia and adipopenia to adverse outcomes in hematologic malignancies. A study of 90 adults with newly diagnosed AML receiving induction chemotherapy demonstrated that CT-assessed sarcopenia was independently associated with inferior three-year OS, with particularly striking outcomes in patients over

60 years, among whom sarcopenic patients had a three-year OS of 0% compared to 49% in non-sarcopenic patients[22]. Our finding in patients receiving low-intensity therapy is consistent with this magnitude of risk and extends the prognostic relevance of sarcopenia to a population treated with non-intensive approaches. Regarding adipose tissue, a systematic review in hematologic malignancies found that low visceral adiposity was associated with approximately twice the mortality risk, and subcutaneous adipopenia with nearly three times the mortality risk[6]— a finding that corroborates our observation that low SATI carried the strongest association with inferior OS among the body composition parameters evaluated. The fact that visceral adiposity (VATI) was not significantly associated with survival in our cohort, while subcutaneous adiposity was, suggests that the anatomical distribution of adipose tissue — rather than total fat mass — may carry distinct prognostic implications, potentially reflecting differences in metabolic and endocrine activity between these compartments.

The paradoxical association between high SATI and increased FN risk warrants careful interpretation. Adipose tissue is not merely an energy reservoir; it is metabolically active and may influence drug pharmacokinetics through alterations in volume of distribution, particularly for lipophilic agents. Increased fat mass has been shown to expand the volume of distribution of lipophilic drugs, potentially altering their plasma concentrations and pharmacodynamic effects[23]. Venetoclax, in particular, is a highly lipophilic molecule primarily metabolized by CYP3A4 with a large volume of distribution[24], making its exposure potentially susceptible to body composition-related variability. Furthermore, adipose tissue in oncologic settings may alter the pharmacokinetics of chemotherapy agents and has been associated with treatment resistance in acute lymphoblastic leukemia through microenvironmental mechanisms[25]. Whether these mechanisms underlie the increased FN risk observed in patients with high SATI in our cohort remains speculative, and no direct evidence linking subcutaneous adiposity specifically to azacitidine or venetoclax myelotoxicity has been established. The observed higher early incidence of FN at 30 days (78.6% vs. 30.8%) in the high SATI group is hypothesis-generating and suggests that the relationship between adipose tissue distribution and treatment-related hematologic toxicity deserves prospective evaluation.

Several strengths of this study deserve acknowledgment. To our knowledge, this is among the first cohorts to simultaneously evaluate CONUT score and CT-based body composition in patients with AML and MDS receiving low-intensity regimens that include venetoclax-based combinations. The use of a standardized, validated CT methodology at the L3 vertebral level ensures reproducibility and comparability with published literature. Additionally, this cohort represents a real-world population from a Latin American referral center, where nutritional compromise is highly prevalent[26] and disease-specific data remain scarce.

This study has several limitations that must be acknowledged. The retrospective design and modest sample size limit statistical power and preclude formal multivariable adjustment for treatment type, disease characteristics, and other potential confounders. CT-based body composition data were available in only half of the patients, raising the possibility of selection bias. The heterogeneity of

treatment regimens — ranging from azacitidine and LDAC monotherapy to venetoclax-based combinations — may have introduced confounding in the survival analyses. Furthermore, as previously discussed, the lymphocyte component of the CONUT score may be inherently limited in AML and MDS due to disease-related cytopenias, and the score was not originally designed or validated for this specific population. Finally, the absence of data on nutritional interventions during treatment precludes causal inference, and the prognostic cutoffs identified should be considered hypothesis-generating pending prospective external validation.

In conclusion, pre-treatment nutritional status — assessed by CONUT score, hypoalbuminemia, and CT-derived body composition parameters — is associated with OS in older patients with AML and MDS receiving low-intensity therapy. These findings support the routine integration of nutritional and body composition assessment into the pre-treatment evaluation of this vulnerable population and underscore the need for prospective studies examining whether targeted nutritional interventions can improve treatment tolerance and survival outcomes.

Declarations

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Data availability statement

The data that support the findings of this study are available from the corresponding author, RDG, upon reasonable request.

Author contribution statement

DCM: conceptualization, data curation, formal analysis, investigation, methodology, writing - original draft. FARO: conceptualization, data curation, formal analysis, investigation, methodology, validation, software, visualization, writing - original draft, writing - review and editing. MACM: data curation, formal analysis, investigation, methodology, writing - original draft, writing - review and editing, software. JLOA: conceptualization, data curation, investigation, methodology, writing - original draft, writing - review and editing, supervision, software. LCCR: data curation, methodology, writing - review and editing. SRR: conceptualization, data curation, formal analysis, investigation, methodology, writing - original draft, software. EIAC: conceptualization, data curation, writing - original draft, visualization, supervision, validation, project administration, methodology, investigation. RDG: conceptualization, formal analysis, data curation, funding acquisition, investigation, methodology, project administration, writing - review and editing, writing - original draft, visualization, validation, supervision, resources, software.

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Declaration of interest statement

RDG received honoraria (speaker/advisory board) from AbbVie, Amgen, Asofarma, Astellas, Pfizer, and Servier. JLOA received honoraria (speaker) from Astellas, and Servier. EIAC received honoraria (speaker) from AbbVie, Astra, BMS, and Novartis. The remaining authors declare no conflicts of interests

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Figures

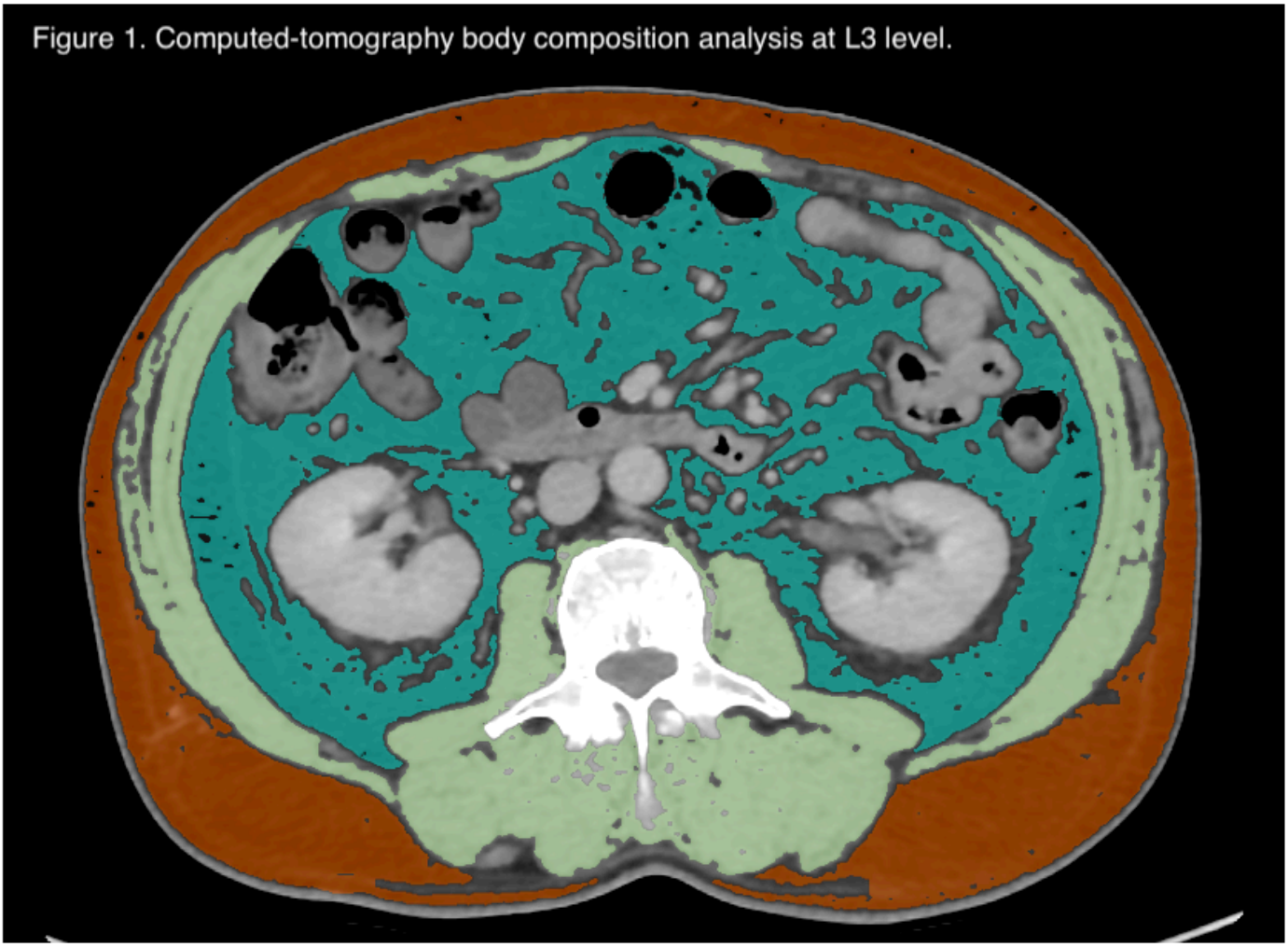


Figure 1

Figure 1. Computed-tomography body composition analysis at L3 level.

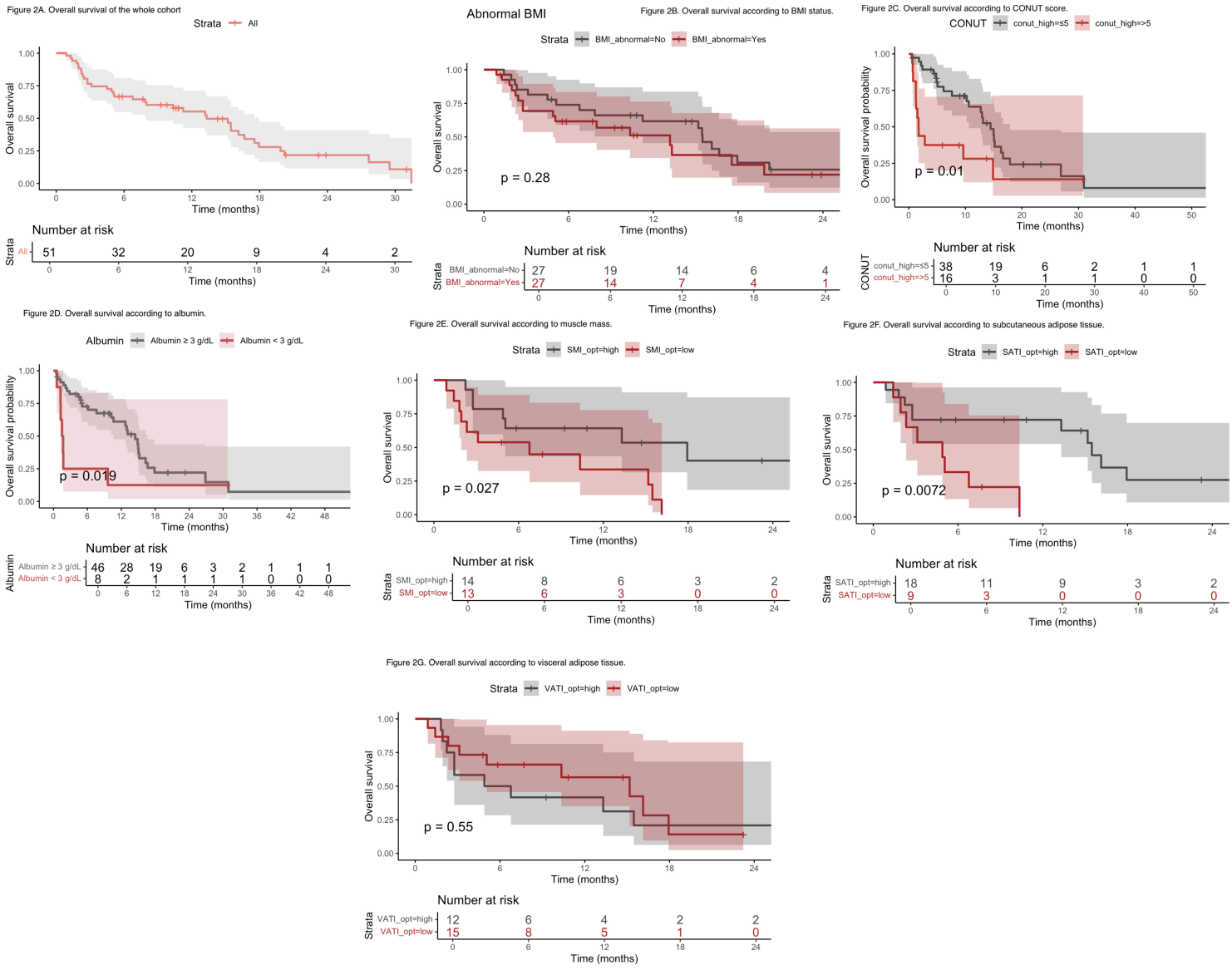


Figure 2

Figure 2A. Overall survival of the whole cohort.

Figure 2B. Overall survival according to BMI status.

Figure 2C. Overall survival according to CONUT score.

Figure 2D. Overall survival according to albumin.

Figure 2E. Overall survival according to muscle mass.

Figure 2F. Overall survival according to subcutaneous adipose tissue.

Figure 2G. Overall survival according to visceral adipose tissue.

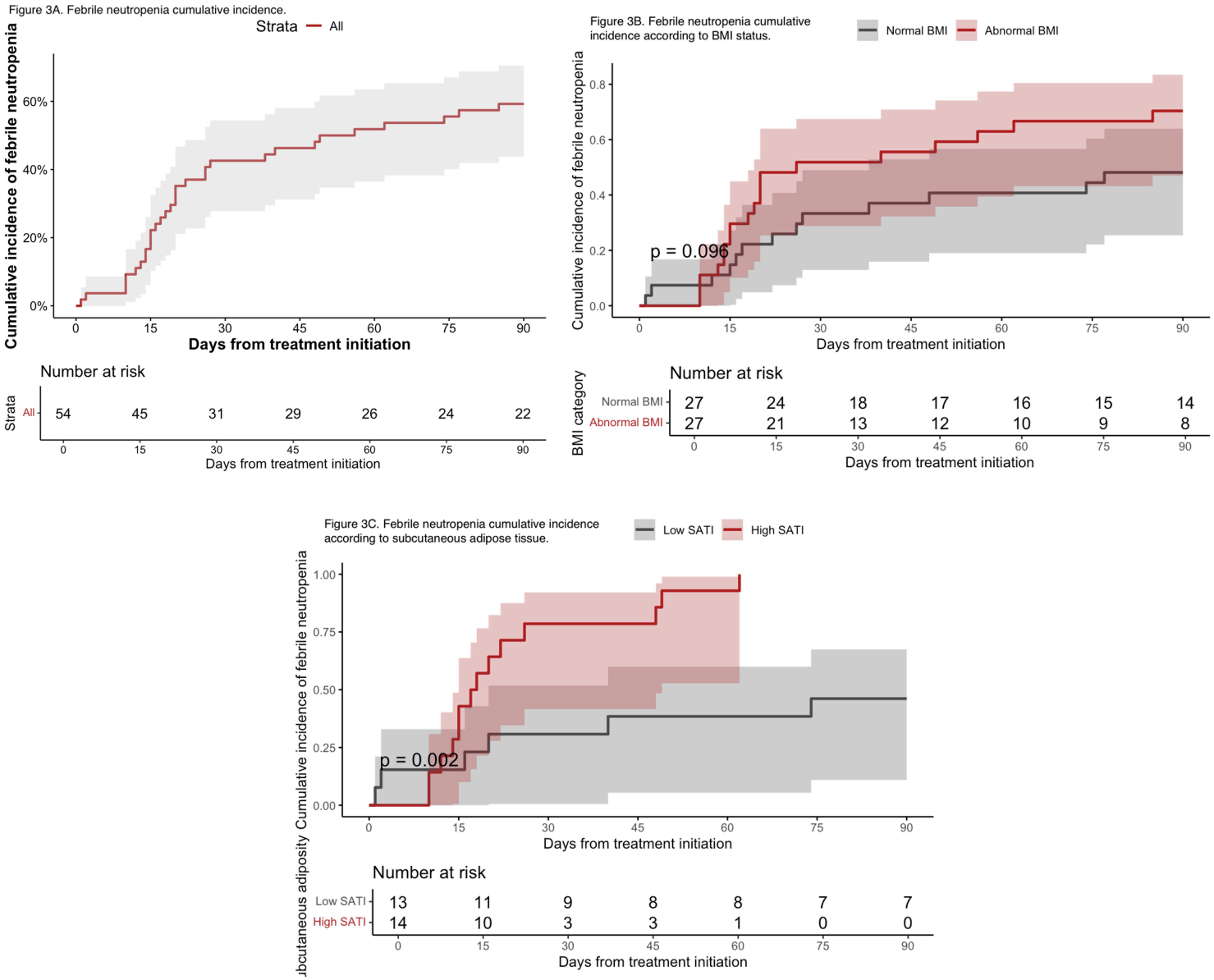


Figure 3

Figure 3A. Febrile neutropenia cumulative incidence.

Figure 3B. Febrile neutropenia cumulative incidence according to BMI status.

Figure 3C. Febrile neutropenia cumulative incidence according to subcutaneous adipose tissue.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Table1Baselinecharacteristicsofthecohort.docx
- Table2DistributionoftheCONUTanditscomponents.docx
- Table3Overallsurvivalacrossnutritionalstatussubgroups.docx

- Table4Febrileneutropeniacumulativeincidenceacrosssubgroups.docx
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