Modified Frailty Index (mFI) Identifies Associations with Peri-Implantitis in HIV Patients

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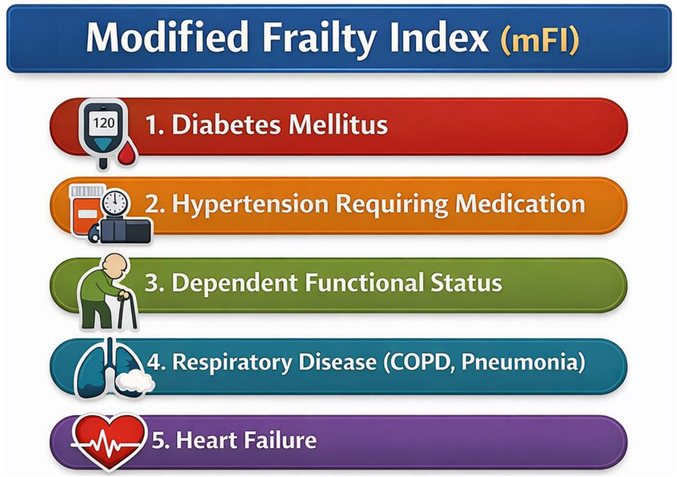
Introduction

- The 5-item Modified Frailty Index (mFI) predicts postoperative morbidity, but its relevance to periodontal outcomes is unknown.[1]
- HIV is associated with increased prevalence and severity of periodontal disease.
- Immune dysregulation and comorbidities in HIV patients may increase susceptibility, suggesting frailty as a potential determinant of outcomes.[2]
- **Objective:** To evaluated the association between mFI and peri-implant health in patients with HIV.

Methods



Methods

- **Study Design:** Retrospective chart review of patients with HIV who received dental implants at UCLA from 2015–2025.
- **Data Collection:** Demographic, medical, and implant-related clinical variables extracted from electronic health record.
- **Peri-Implant Status**:
  - Healthy: No radiographic bone loss or implant failure.
  - Severe Peri-Implantitis: >50% peri-implant bone loss or implant failure.
- **Statistical Analysis:**
  - Continuous variables compared via Wilcoxon rank-sum test.
  - Logistic regression evaluated associations between mFI and per-implant health status.

Results

- **94 patients** met inclusion criteria
  - 44 (46.8%) classified as peri-implant healthy
  - 9 (9.6%) had severe peri-implantitis
- **Mean age:** 62.1 ± 7.7 years; **6.3% female**
- **Implant failures**: 14 failures in 7 patients
- **Frailty vs. Outcomes:**
  - Mean mFI was lower in healthy vs. severe peri-implantitis patients: 0.68 ± 0.85 vs. 1.50 ± 0.53 (p = 0.008)
  - Higher mFI was associated with severe peri-implantitis (OR = 3.12; 95% CI: 1.25–9.48; p = 0.023).

Results

Table 1. Demographics and clinical characteristics of HIV patients receiving dental implants (N = 95 patients; 209 implants).

Characteristic	Value
Age (years), mean ± SD	60.8 ± 9.0
Female Sex, n (%)	6 (6.3%)
BMI (kg/m^2), mean ± SD	26.4 ± 3.5
Smoker (current/former), n (%)	41 (43.2%)
Modified Frailty Index, mean ± SD	0.82 ± 0.89
Diabetes Mellitus, n (%)	10 (10.5%)
Hypertension, n (%)	39 (41.1%)
Respiratory Disease, n (%)	20 (21.%)
Cardiovascular Disease, n (%)	7 (7.4%)
Bone Density, n (%)	
Healthy	90 (96.7%)
Osteopenia	1 (1.1%)
Osteoporosis	2 (2.2%)
Failed Implants, n (%)	14 (6.7%)
Peri-Implant Health, n (%)	
Healthy	115 (55.0%)
Peri-Implant Mucositis	57 (27.3%)
Peri-Implantitis	37 (17.7%)

Conclusions

- Higher mFI is associated with severe peri-implantitis in patients with HIV.
- Frailty assessment may improve risk stratification to guide periodontal treatment and surveillance.

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