ULTRASOUND ASSESSMENT OF QUADRICEPS MUSCLE THICKNESS AS A PROGNOSTIC TOOL IN ADVANCED CHRONIC LIVER DISEASE: A PROSPECTIVE STUDY

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Bedside quadriceps muscle ultrasound predicted hepatic decompensation and 6-month mortality in 55 hospitalized patients with advanced chronic liver disease, with lower thickness/height ratios conferring approximately 9-fold and 5-fold increased risk, respectively.

KEY POINTS

- Lower quadriceps thickness/height ratio was independently associated with hepatic decompensation (OR ≈ 9, p = 0.01) and 6-month mortality (OR ≈ 5, p = 0.03) in patients with ACLD.
- ROC analysis showed good discrimination for hepatic decompensation (AUC = 0.698, p = 0.02) and moderate discrimination for mortality (AUC = 0.638, p = 0.04), with optimal cut-offs of 7.95 cm/m and 7.0 cm/m, respectively.
- Kaplan-Meier analysis demonstrated significantly earlier decompensation and reduced survival in patients with lower muscle thickness (log-rank p < 0.05 for both outcomes).
- The study included 55 consecutive hospitalized patients (85.5% male, mean age 60 years, median MELD-Na 20, most Child-Pugh C, 69% alcohol-related liver disease) followed for six months; 34.5% developed hepatic decompensation and 38.2% died.
- Quadriceps thickness was measured using a 7.5–10 MHz linear probe at two-thirds the distance between the anterior superior iliac spine and patella, with three measurements per limb normalized to patient height (mean 7.22 ± 2.11 cm/m).
- Study limitations included small sample size, single-center design, and lack of functional muscle assessment or CT validation.

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