ISPOR EUROPE 2026 · PATIENT-CENTERED RESEARCH · CLINICAL OUTCOMES

PCR222

Evaluating the Impact of Coenzyme Q10 on Health-Related Quality of Life in Patients with Metabolic Dysfunction-Associated Fatty Liver Disease: A Patient-Reported Outcomes Study

Scan for poster

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01 BACKGROUND

- Metabolic dysfunction-associated fatty liver disease (**MAFLD**) is associated with **impaired health-related quality of life** (HRQoL).
- Lifestyle modification remains the **standard of care (SOC)**, yet improvements in patient-reported outcomes are often **limited**.

OBJECTIVE

To evaluate the effect of **adding coenzyme Q10 (CoQ10) to SOC** on HRQoL in patients with MAFLD over **3 months**.

02 METHODS

Randomized clinical trial · NHTMRI outpatient clinic, Cairo, Egypt · Oct 2023 – Feb 2025

ASSESSED	RANDOMIZED	ALLOCATED	INTERVENTION	ANALYSED
173	75	38 | 37	3 months	36 | 36
MAFLD outpatients, NHTMRI	98 excluded	SOC alone | CoQ10 + SOC	Lost to follow-up: 2 | 1	Per-protocol, n = 72

SOC alone (n = 38)
DASH-MED diet + structured exercise

CoQ10 + SOC (n = 37)
CoQ10 200 mg/day in 2 divided doses + SOC

Assessment timeline
Month 0 · CLDQ — 3 months — Month 3 · CLDQ

Outcome: validated Arabic Chronic Liver Disease Questionnaire (CLDQ), paper-based · 6 domains scored 1–7 · **higher = better HRQoL**

Abdominal (AB) | **Fatigue (FA)** | **Systemic (SY)** | **Activity (AC)** | **Emotional (EM)** | **Worry (WO)**

Between groups: Student's t / Mann–Whitney U
Within groups: Paired t / Wilcoxon signed-rank
Adjusted: ANCOVA on baseline score
Multiplicity: Benjamini–Hochberg FDR

72 patients completed the study (36 per arm)

03 RESULTS

+2.32
Change in composite CLDQ with CoQ10 + SOC (2.27 → 4.59)

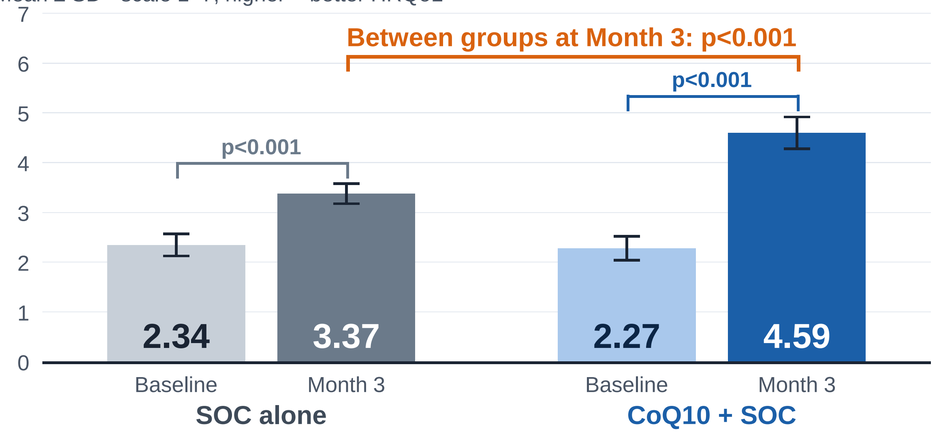
+1.03
Change in composite CLDQ with SOC alone (2.34 → 3.37)

4.60 vs 3.36
ANCOVA-adjusted composite CLDQ at Month 3 (p<0.001)

5 of 6
CLDQ domains higher with CoQ10 after ANCOVA and FDR correction

A Composite CLDQ score

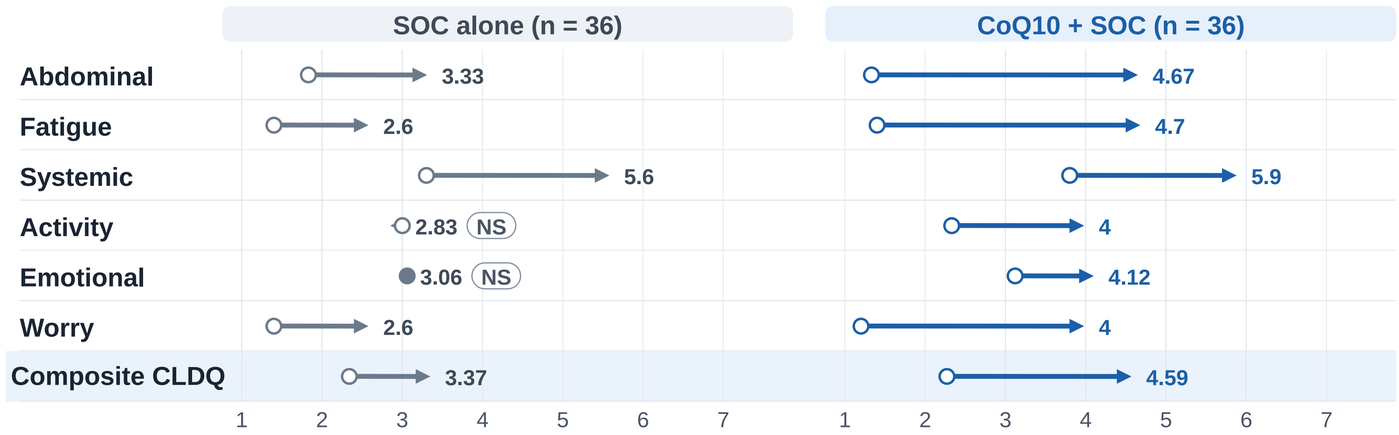
Mean ± SD · scale 1–7, higher = better HRQoL



Within group: paired t-test · between groups: Student's t-test.

B Within-group change, baseline → Month 3

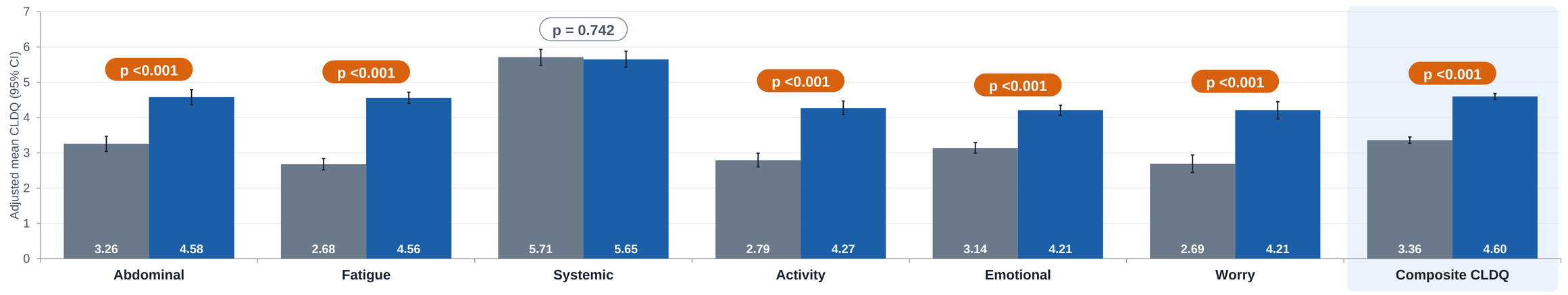
Median score per domain (composite: mean) · ○ baseline ● Month 3 · scale 1–7



All within-group changes p<0.001 except NS: SOC activity (p = 0.608) and emotional function (p = 0.475). Wilcoxon signed-rank / paired t-test.

C Between-group comparison at Month 3: ANCOVA-adjusted mean CLDQ score

Adjusted for each patient's baseline score · bars = adjusted mean, whiskers = 95% CI · higher = better HRQoL



Significant with CoQ10 after baseline adjustment
Abdominal, fatigue, activity, emotional function, worry and composite CLDQ: all p<0.001 (ANCOVA), retained after Benjamini–Hochberg FDR correction (q ≤ 0.001).

Systemic symptoms: no between-group difference
Both arms improved within group (p<0.001), but Month-3 scores were similar (p = 0.114; ANCOVA p = 0.742).

04 CONCLUSIONS

1. Adding CoQ10 to SOC **significantly improved liver-specific HRQoL** in patients with MAFLD over 3 months.
2. Composite CLDQ rose by **2.32 points** with CoQ10 vs 1.03 with SOC alone (adjusted Month-3 score 4.60 vs 3.36; p<0.001).
3. Gains extended to **activity and emotional function**, domains that did not change with SOC alone.
4. Systemic symptoms improved similarly in both arms.
5. CoQ10 is a **promising adjunctive intervention** that warrants further investigation.

Trial registration ID: NCT05984745

05 · CLINICAL & HEOR IMPLICATIONS

Why it matters

Patient-perceived benefit
Adding CoQ10 to lifestyle-based SOC was associated with better liver-specific HRQoL in 5 of 6 CLDQ domains.

Beyond lifestyle alone
Activity and emotional function improved only with CoQ10, addressing gaps left by diet and exercise.

Evidence for value assessment
Domain-level CLDQ effect estimates can inform larger, longer, multicentre trials and future economic evaluations of adjunctive therapy in MAFLD.

06 References

1- Younossi Z, Aggarwal P, Shrestha I, Fernandes J, Johansen P, Augusto M, Nair S. The burden of non-alcoholic steatohepatitis: a systematic review of health-related quality of life and patient-reported outcomes. *JHEP Rep*. 2022;4(9):100525. PMID: 36039144.
2-Younossi ZM, Guyatt G, Kiwi M, Boparai N, King D. Development of a disease specific questionnaire to measure health related quality of life in patients with chronic liver disease. *Gut*. 1999;45(2):295–300. doi:10.1136/gut.45.2.295

Abbreviations: AB, abdominal symptoms; AC, activity; ANCOVA, analysis of covariance; CI, confidence interval; CLDQ, Chronic Liver Disease Questionnaire; CoQ10, coenzyme Q10; EM, emotional function; FA, fatigue; FDR, false discovery rate; HRQoL, health-related quality of life; MAFLD, metabolic dysfunction-associated fatty liver disease; NHTMRI, National Hepatology and Tropical Medicine Research Institute; NS, not significant; SD, standard deviation; SOC, standard of care; SY, systemic symptoms; WO, worry.

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