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Optimizing coenzyme Q10 dosage in idiopathic oligoasthenozoospermia: A crucial step toward improving pregnancy rates

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To the Editor: The recent study by Rochdi *et al*[1] comparing the effects of two coenzyme Q10 (CoQ10) doses (100 mg/day *vs.* 200 mg/day) on male fertility parameters represents a significant advancement in evidence-based treatment of idiopathic oligoasthenozoospermia. The findings demonstrate a clear dose-response relationship with profound clinical implications that deserve focused attention.

The most compelling finding is the 53% relative increase in pregnancy rates between the higher and lower dose groups (23% *vs.* 15%, $P < 0.001$). This 8-percentage point absolute difference translates to a number needed to treat (NNT) of 12.5, meaning that for every 12-13 men treated with the higher dose instead of the lower dose, one additional pregnancy would be achieved. Given that male factor infertility contributes to approximately 50% of all infertility cases globally, this dose-response relationship has immediate clinical relevance.

The study's findings align remarkably well with previous analyses of randomized controlled trials that demonstrated optimal efficacy at 200-300 mg/day dosing[2]. Safarinejad's landmark study[3] using 300 mg/day CoQ10 achieved a 34.1% pregnancy rate, while Alahmar's work with 200 mg/day showed similar improvements in sperm parameters[4]. The current study's 23% pregnancy rate with 200 mg/day provides a crucial intermediate data point, establishing a clear therapeutic window.

The parallel improvement in sperm DNA fragmentation index (DFI) with both doses, showing greater reduction at 200 mg/day, provides mechanistic validation for the pregnancy rate findings. The significant correlations between DFI reduction and conventional sperm parameters (concentration $r = 0.75$, $P = 0.030$; motility $r = 0.21$, $P = 0.015$) suggest that CoQ10's antioxidant properties directly translate to improved reproductive outcomes.

These findings challenge current practice patterns where CoQ10 dosing often lacks standardization. The study provides compelling evidence that 200 mg/day represents a clinically superior dose compared to 100 mg/day, with the enhanced pregnancy rate justifying the increased cost and potential for better patient compliance with a more definitive therapeutic approach.

While the 6-month treatment duration aligns with spermatogenesis cycles, longer-term follow-up studies would strengthen the evidence

base. Additionally, the absence of a placebo control group limits conclusions about absolute efficacy, though the clear dose-response relationship provides robust internal validity.

This study establishes 200 mg/day CoQ10 as the evidence-based standard for treating idiopathic oligoasthenozoospermia, with the pregnancy rate differential providing the most clinically relevant outcome measure for patient counseling and treatment selection.

Conflict of interest statement

The author declares no conflicts of interest.

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Author's contributions

Arwa Mohamed Amer Ibrahim made contributions to the conception, drafting, and revision of the manuscript, and confirmed and approved the final version of the manuscript.

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Editor's Note

Rochdi *et al* did not respond to editor's requests for reply to the correspondence.

Edited by Lin LY