Table S1. Detailed Risk of Bias Assessment (Cochrane RoB 2). Each study was evaluated using the Cochrane ROB v2 , rating each domain as low risk, high risk, or some concerns/unclear risk.

Study	D1. Randomization process	D2. Deviations from intended interventions	D3. Missing outcome data	D4. Measurement of outcome	D5. Selection of reported result	Overall
Amini et al. [10]	Computer-generated randomization with balanced baseline characteristics. Allocation concealment adequately described.	Double-blind placebo-controlled design; adherence monitored; ITT analysis performed.	Minimal loss to follow-up (<10%) with balanced attrition.	Hormonal assays and semen analyses performed using validated standardized methods by blinded personnel	Trial registered prospectively; predefined outcomes consistently reported	Low
Bartl et al. [11]	Randomization described although concealment incompletely reported.	ntervention administered as planned with minimal crossover.	Outcome completeness satisfactory.	Objective biochemical and semen outcomes.	Prespecified outcomes incompletely documented.	Low
Begum et al. [12]	Random allocation described but method insufficiently detailed.	Participants treated according to assigned intervention with adequate blinding reported.	Missing outcome data limited and unlikely to affect conclusions.	Objective laboratory measurements used.	Protocol unavailable; selective reporting cannot be excluded.	Low
Gheflati et al. [13]	Randomization adequately described; comparable baseline characteristics.	Double-blind intervention with good compliance.	Few missing data; reasons reported.	Standard laboratory assays performed identically in both groups.	No evidence of selective reporting.	Low
Hayder et al. [14]	Randomization described but concealment incompletely reported.	Blinding adequate with minimal protocol deviations.	Attrition acceptable.	Outcomes objectively measured.	Analysis plan unavailable.	Low

Holt et al. [15]	Central computerized randomization, double blinding, excellent baseline balance.	Intervention adherence excellent; predefined subgroup analyses specified before analysis.	Small amount of missing data unlikely to bias estimates.	Hormonal outcomes measured using validated assays; blinded assessment.	Registered trial, outcomes reported according to protocol.	Low
Jansen et al. [16]	Computer-generated allocation with concealed sequence and placebo control.	Double-blind RCT with excellent adherence.	Attrition minimal and balanced.	WHO semen analysis and standardized endocrine assays.	Registered trial with prespecified outcomes reported.	Low
Maghsoumi-Norouzabad et al. [17]	Randomization reported; triple-blind design. Allocation concealment insufficiently described.	Triple blinding minimized performance bias; protocol deviations unlikely.	Attrition low and balanced between groups.	Laboratory outcomes objectively measured using WHO protocols.	Outcomes reported as prespecified although statistical analysis plan unavailable	Low
Wadhwa et al. [19]	Appropriate random sequence generation and allocation concealment.	Placebo-controlled with adequate masking and compliance.	Missing data minimal.	Objective standardized laboratory measurements.	No evidence of selective reporting.	Low