

LYCOPENE THERAPY IN IDIOPATHIC MALE INFERTILITY: RESULTS OF A CLINICAL TRIAL

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Introduction Mammalian spermatozoon membranes are rich in high-unsaturated fatty acids and are sensitive to oxygen induced damage mediated by lipid peroxidation. Excessive generation of reactive oxygen species (ROS) containing free oxygen radicals has been identified as one of the causes of this damage. Lycopene is one of 650 different carotenoids naturally synthesized and found in fruits. It is also a component of human redox defence mechanism against free radicals. It is found in high concentrations in the testes and lower levels have been demonstrated in men suffering from infertility. We evaluate the effect of oral lycopene therapy in men with infertility.

Materials and Methods Beginning March 2003, thirty men with idiopathic infertility were enrolled for the trial. Patients with idiopathic non-obstructive oligo/asthenozoospermia were included. All patients were administered a tablet containing 2000 mcg of Lycopene, twice a day for three months. Semen analysis was performed at one and three months. Normal semen parameters were defined as sperm concentration > 50 million/ml, $> 50\%$ motility of grade ≥ 2 and more than 50% normal morphology.

Results Twenty-one patients completed the trial till the date of this analysis. There were no dropouts and no complications reported. Nine patients had all three parameters abnormal, eleven had two abnormal parameters while one had isolated motility abnormality. The results are summarised in the table below:

Parameter	Baseline	3Months	Improvement % Cases(%)
Conc. (Million/ml)	20.71 \pm 24.67 (1-110)	31.09 \pm 37.88 (0-12)	50% 11(52%)
Motility (%Normal)	25.14 \pm 21.78 (0-70)	29.52 \pm 21.44 (0-65)	17% 12(57%)
Morphology (%Normal)	40.04 \pm 21.19 (0-80)	33.85 \pm 29.11 (0-88)	-15% 8(38%)

Maximum improvement and all pregnancies (4) were noted in the group with baseline semen concentration greater than 5 million/ml. **Conclusions** Oral Lycopene therapy does seem to have a role for in the management of idiopathic male infertility. Maximum improvement seems to occur in the motility (57% cases) followed by concentration (52% cases). Patients without severe oligospermia (i.e. counts > 5 million/ml) should be given a trial of therapy with lycopene. However, larger randomised controlled trials are essential before definitive therapeutic guidelines can be laid.