

## 5.2 Smoking and semen quality; Comparative study in a Sri Lankan subfertile population

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### ABSTRACT

**Rationale:** Adverse effects of smoking on reproductive health are well established, but the extent of its effects on semen parameters is inconclusive.

**Aims:** Aims of this study were to find out the prevalence of smoking habit in a subfertile population in Sri Lanka, and to find out the relationship between smoking and semen parameters.

**Design and setting:** Cohort study was carried out at the, Infertility unit, department of Obstetrics and Gynaecology, Faculty of Medicine, Ragama.

**Patients and Method:** Detailed history (including smoking habit) was taken from 1300 men undergoing subfertility evaluation. Males with Azoospermia or severe oligozoospermia, history of STI, mumps related orchitis, varicocele, DM, use of recreational drugs and regular medication for any other disease and occasional smokers were excluded. Four hundred men who fulfilled the inclusion criteria were enrolled in the study (200 smokers and 200 non smokers). Semen analyses of all subjects with the standard 3-5 days of sexual abstinence were performed. Statistical analysis was done using the SPSS 10.0 for windows software.

**Result:** Pathozoospermics were significantly high among smokers compared to non smokers (93 Vs. 73,  $p < 0.05$ ). Similarly, semen volume, total sperm count and morphology were low in smokers; mean (SD) volume 2.30 (1.18) Vs. 2.89 (2.36), total count 124.75 (105.14) Vs. 151.94 (114.10) and morphology 45.57 (13.05) 48.17 (12.86) respectively ( $p < 0.05$ ). Both duration of smoking and intensity (duration x number of cigarettes) had negative correlation with sperm viability;  $r = -0.199$  and  $-0.151$  respectively ( $p < 0.05$ ).

**Conclusion:** Smoking is associated with reduced semen quality affecting the semen volume, total sperm count, morphology and viability in this population.

**Key Words:** Smoking, Subfertility, Semen parameters