

**Reproductive hormones in seminal plasma; It's effect on semen quality**S Wijeratne\*<sup>1</sup>, H R Seneviratne<sup>1</sup> and W D Ratnasooriya<sup>2</sup><sup>1</sup> Department of Obstetrics & Gynaecology, Faculty of Medicine, , University of Colombo, Colombo 08<sup>2</sup> Department of Zoology, Faculty of Science, University of Colombo, Colombo 03

This study carried out at the Reproductive Biology Laboratory at the Faculty of Medicine, University of Colombo, aimed at investigating the effect of reproductive hormones in seminal plasma on quality of the spermatozoa in men seeking infertility treatment. The study sample consisted of 123 males with normal sperm parameters and 260 males with either single or combination of sperm abnormalities as per WHO criteria. Follicle Stimulating Hormone (FSH), Luteinizing Hormone (LH) Prolactin (PRL), Testosterone (T) and Oestradiol (E<sub>2</sub>) were determined in serum and seminal plasma of all these men using an immunometric chemiluminance assay. Serum FSH and LH levels were significantly higher ( $p < 0.001$  for both) and T levels were significantly lower ( $p < 0.01$ ) in the seminal fluid analysis (SFA) abnormal group than the normal group. In contrast, there was no significant difference in the mean PRL and E<sub>2</sub> levels in the serum of individuals with normal and abnormal semen parameters. With regard to semen hormones, men with both normal and abnormal semen parameters, mean FSH, LH and T levels in seminal plasma and serum were not statistically significant. In contrast, mean PRL and E<sub>2</sub> levels were significantly higher in semen than in serum ( $p < 0.01$  for both). Moreover, men with abnormal semen had significantly higher levels of semen PRL ( $p < 0.001$ ) and E<sub>2</sub> ( $p < 0.05$ ) than that of normozoospermic men. Further, semen PRL showed a significant negative correlation with sperm motility ( $r = -0.398$ ;  $p < 0.001$ ), morphology ( $r = -0.322$ ;  $p < 0.01$ ) and viability ( $r = -0.328$ ;  $p < 0.01$ ). A significant positive correlation between PRL and semen volume was also observed in both normal and abnormal groups ( $r = 0.21$  and  $r = 0.29$  respectively;  $p < 0.05$ ). Serum PRL however was unrelated to sperm parameters. Semen E<sub>2</sub> in the abnormal group also showed a significant negative relationship with sperm motility ( $r = -0.305$ ;  $p < 0.01$ ). In conclusion, in men with abnormal semen parameters both PRL and E<sub>2</sub> in semen have a negative impact on sperm motility. Further, it was also evident that semen PRL has a negative relationship with sperm morphology and viability.

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