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## Enkephalin-Degrading Enzymes in Normal and Subfertile Human Semen

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Opioid peptides have been reported to have important functions in human reproduction. Indeed, very high concentrations of enkephalins and their degrading enzymes have been reported in human semen. In the present paper, we compare the activity of two enkephalin-degrading enzymes, aminopeptidase N and neutral endopeptidase 24.11, in different fractions of semen from normozoospermic, fertile men and from subfertile patients with different abnormalities revealed by spermogram analysis (asthenozoospermia, necrozoospermia, and teratozoospermia). High levels of activity of aminopeptidase N were found in the soluble and particulate sperm fractions of semen from patients presenting asthenozoospermia with necrozoospermia. In contrast, lower aminopeptidase N activity was measured in the soluble sperm fraction of asthenozoospermic semen. The percentage of dead spermatozoa was positively correlated with aminopeptidase N activity in both soluble and particulate sperm fractions. In contrast, the percentage of immobile spermatozoa was negatively correlated with aminopeptidase activity in soluble and particulate sperm, and in prostasome fractions. Levels of activity of neutral endopeptidase were found to be unaltered among the different conditions. In summary, the results of the present study indicate that alterations in the activity of aminopeptidase N may be one of the molecular components that contribute to male human subfertility.

Key words: Opioid peptide, peptidase, seminal fraction, sperm motility, sperm death

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