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JOURNAL ARTICLE

The application of pentoxifylline in the stimulation of sperm motion in men undergoing electroejaculation

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The ability of pentoxifylline to stimulate the motion characteristics of antegrade and retrograde sperm collected at the time of electroejaculation with a rectal probe was assessed in six neurologically impaired men. Before electroejaculation, the bladder was rinsed and instilled with 20 to 30 ml Ham's F-10 medium. Washed sperm were incubated with various doses (0, 0.1, 1, and 3 mmol/L) of pentoxifylline. Video sequences were recorded at intervals from 0 to 4.5 hours and analyzed for sperm motion parameters using manual and computer-assisted semen analysis. The results were compared with equimolar concentrations of caffeine. Both pentoxifylline and caffeine demonstrated a dose-dependent stimulation of percent motility and other motion parameters. A maximal stimulation of two-fold to three-fold for both percent motility and curvilinear velocity, and 30% to 60% for straight line velocity was observed after incubation under these conditions. A significant increase in mean linearity was observed in samples incubated with 0.1 mmol/L pentoxifylline at 1.5 hours. Significant lateral head displacement was not observed at any time point. Two couples underwent gamete intrafallopian transfer (GIFT) in conjunction with this electroejaculation sperm stimulation procedure, and one has since delivered a normal child. These studies show that pentoxifylline stimulation can improve the movement characteristics of asthenospermic sperm from neurologically impaired men. Such sperm stimulation techniques do not affect the fertilization process and may improve the chances for conception in some cases of male-factor infertility.

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