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JOURNAL ARTICLE

Leydig cell cytoplasmic content is related to daily sperm production in men

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The relationship between the abundance of specific Leydig cell organelles and daily sperm production (DSP) was determined. Testes from 10 men (26-53 years of age) were obtained at autopsy within 10 h of traumatic death or heart failure and fixed by vascular perfusion. Testicular tissue was processed for light and electron microscopy. DSP/testis and Leydig cell cytoplasmic volume/testis were determined by stereology of histologic sections. The Leydig cell organelle content was determined by point counting electron micrographs for smooth endoplasmic reticulum (SER), rough endoplasmic reticulum, mitochondria, lipofuscin pigment, lipid, Golgi bodies, and Reinke crystals. Men were divided equally into two groups based on DSP/testis. Men with low DSP/testis had less SER volume density (P less than 0.01) and lower SER volume per testis (P less than 0.05) than men with high DSP. Other organelles were unrelated to DSP. When all men were combined, the volume density of SER ($r = 0.80$; P less than 0.01), the volume SER per testis ($r = 0.69$; P less than 0.05), and the volume SER per Leydig cell ($r = 0.84$; P less than 0.01) were significantly related to DSP. Hence, there appears to be a significant relationship between Leydig cell SER and the level of spermatogenesis in men.

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