Journal of Andrology, Vol. 24, No. 5, September/October 2003

Reduced Human Germ Cell-Less (*HGCL*) Expression in Azoospermic Men With Severe Germinal Cell Impairment

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Germ cell-less (GCL) protein is a nuclear envelope protein highly conserved between the mammalian and *Drosophila* orthologues. In *Drosophila*, maternal GCL protein is required to establish the germ lineage during embryonic development. In mammals, it is suggested that the GCL function is mainly in spermatogenesis and that it might be related to the ability of mouse GCL to repress transcription. Using reverse transcriptase-polymerase chain reaction analyses, we investigated the role of human GCL (*HGCL*) in spermatogenesis by studying its expression in the testicular tissue of 67 azoospermic men with normal karyotype and no Y-chromosome microdeletion. Their testicular biopsy specimens underwent meticulous histological and cytological analysis as well as molecular analysis with various markers of spermatogenesis (*RBM1*, *DAZ*, and *CDY1*). The rate of X-Y and 18 chromosome bivalent formation during meiosis was additionally assessed in 22 of these biopsy specimens and correlated to *HGCL* expression. Expression of *HGCL* was affected in parallel with the severity of testicular impairment found. Defective sperm motility was associated with the absence of *HGCL*. Nevertheless, the absence of *HGCL* expression did not influence the normal process of chromosome bivalent formation in meiosis. Our results suggest that HGCL is not essential for the chromosomal events of meiosis but might be involved in later aspects of spermatogenesis.

Key words: Testicular *HGCL* expression, markers of spermatogenesis, spermatogenesis impairments, motility impairments, *HGCL* and chromosome bivalent formation

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