

Expression of OCT3/4, c-KIT, plap of gonocytes in cryptorchidism testes

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Background: The association between undescended testis (cryptorchidism) and seminoma is established. The precursor lesion is referred to as carcinoma in situ of the testis (CIS). CIS cells are very similar to gonocytes because only five genes distinguish these two cell types. Gonocytes are primitive germ cells with pluripotent protein expressions (OCT3/4, c-Kit, PLAP). The current study was designed to identify whether the gonocytes in cryptorchidic patients continue with the expression of OCT3/4, c-Kit and PLAP.

Methods: Immunohistochemistry was used to assess pluripotent protein expression (OCT3/4, c-Kit, PLAP) in testes of cryptorchidic patients (30) and normal testes (20), (0 to 18 years old).

Results: The level of expression of OCT3/4, c-Kit and PLAP were very high in 8 cryptorchidism testes (1, 2, 4, 6, 8 and 16 years old) when compared with undetectable expression in normal testes (1, 2, 4, 6, 8 and 16 years old).

Conclusions: Various markers including c-KIT, PLAP, AP-2 γ , NANOG, and OCT3/4 are important immunohistochemical markers for the diagnosis of CIS in adult testis.

In the present study, it is shown that OCT3/4, c-Kit and PLAP which are known specific markers of fetal gonocytes were expressed in the testes of cryptorchidic patients suggest the presence of stem cell potential. These observations suggest that pluripotent gonocyte may either play a direct role in different types of carcinoma progression or serve as valuable markers of carcinogenesis. CONACyT:162006, INP: 64/2010.

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