32

Delayed Onset of Prostate Adenocarcinoma in Transgenic Mice by Use of Human Umbilical Cord Blood.

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The incidence of the neoplasm prostate carcinoma increases with age. The human immune system is known to deteriorate with aging. The possibility exists that there may be a direct relationship between the aging immune system of the patient and the incidence of prostate carcinoma. Previously we have shown that human umbilical cord (HUCB) blood mononuclear cells can ameliorate breast carcinoma in mice. Many pathologists believe that breast cancer and prostate cancer have a similar biological behavior. With the use of HUCB we have been able to produce temporary implantation of DNA in mice animal models of human diseases. Under the theoretical consideration that HUCB mononuclear cells can produce a temporary juvenile immune system in mice and with the advent of a transgenic mouse model with prostate adenocarcinoma, we attempted to determine what effect HUCB mononuclear cells would have on prostatic adenocarcinoma.

Twenty transgenic mice, an animal model of human prostate adenocarcinoma, were obtained from Jackson Laboratory. The animals were divided into 3 groups: 2 control groups of 5 untreated animals and a group of 5 mice treated with bone marrow (5×10^6) nucleated cells obtained from a similar wild type mouse. 10 mice were treated with 150 to 200 $\times$ 10^6 HUCB mononuclear cells in 2 to 3 retro-orbital injections.

At 23 to 25 weeks of age, 4 tumors biopsy proven were present in the 10 control animals. At this time no neoplasm was detected in the 10 mice treated with HUCB mononuclear cells.

These preliminary studies indicate that HUCB mononuclear cells may significantly inhibit (delay) growth of prostatic adenocarcinoma in transgenic mice.