

Experimental study on preventive and therapeutic effect of bushen huoxue recipe on autoimmune premature ovarian failure model

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OBJECTIVE: To investigate the mechanisms of Bushen Huoxue Recipe (BSHXR), a Chinese herbal medicinal preparation for tonifying Kidney and invigorating blood circulation, to prevent and treat autoimmune premature ovarian failure (POF) model.

METHODS: Female 8-10 weeks old BAL B/c mice were immunized by intracutaneously injecting porcine ovum zona pellucida (ZP), isolated by immuno-chromatography, in multiple points of two hind footpads to establish the POF model and treated with BSHXR started from early stage of immunization (prevented group) or after 3 times of injection (treated group). Changes in vaginal smears, serum estradiol (E2), antibody titer against ZP, response of splenic lymphocyte to ZP stimulation of different concentrations, and numbers of ovarian follicles and corpus luteum were analyzed. **RESULTS:** Serum E2 level in the prevented and treated mice was all higher than that in the non-treated immunized model mice (the control group), $P < 0.01$ and $P < 0.05$ respectively. But the anti-ZP titer lowered significantly after BSHXR administration, as compared with that in the control group. Level of antibodies in the treated group was lower than that of the control, and it was also lower in the prevented group than that in the control. The histomorphological examination showed that the developing follicles and corpus luteum after BSHXR medication in both prevented and treated group increased significantly as compared with that of the control group ($P < 0.05$ and $P < 0.01$ respectively). Splenic lymphocyte in the immunized model showed a higher antigen-specific proliferation reaction than that in non-immunized animal, and the reaction was ameliorated by BSHXR medication.

CONCLUSION: BSHXR could recover part of the ovarian function in POF mice mainly through inhibiting specific immune injury to revive the remnant follicles in ovary. The preventive effect of BSHXR was superior to the therapeutic effect of it.

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