Effects of Leukocyte Extract in autoimmune prostatitis: histopathological evaluation in a murine model

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Introduction. Prostatitis is a disease characterized by inflammation of the prostatic tissue, pelvic pain and urinary disorders. The National Institute of Health from United States classified this pathology into four categories; of this four the Nonbacterial prostatitis, chronically prostatitis/ chronic pelvic pain syndrome (CP / CPPS) occupy 90 to 95% of all cases of prostatitis[1]. The CP / CPPS has a strong autoimmune factor, which can be related to more serious diseases like prostatic hyperplasia (BPH) and prostatic cancer[2]. Prostatic cancer occupy the second place in mortality in men. Currently various anti-inflammatory drugs are used for the disease, however they have significant side effects, reason for which many physicians are search for alternatives treatments, such as immunotherapeutic agents.

The main objective of this research was to evaluate the histopathological and molecular effects of the Leukocyte Extract (LE) in a murine model of experimental autoimmune prostatitis (EAP).

Methods. Standardization of the murine model of EAP: We produced a homogenate with the prostate and seminal vesicles from male Wistar rats of 3 months of age or at least 250g. Prostatic lysates were supplement with diazonium salt of sulphanilic and arsanilic acids and Freund's complete adjuvant. The mixture was used to immunize male Wistar rats of 3 months of age or 250g. Four groups were formed, the first was immunized subcutaneously at days 0, 15 and 30, the second was immunized intraperitoneally, the third group we immunized alternating the subcutaneous and intraperitoneally (SIS group) administration routes and in last group we combinate the subcutaneous and intraperitoneally inmunization (SI group). Rats were sacrificed on day 34 and the hematoxylin-eosin (HE) and toloudine blue staining for inflammatory cell search were performed.

After the standardization, we formed four groups of animals, a normal group and three groups of animals with prostatitis. First group was treated with the LE (n=7) (LE group), second group was treated with dexametasone (0.15mg/ kg/ day) (n=7) (Dex group) and third group was treated with placebo (glycine) (Gly group)(n=7), treatments were form 15 to 34 days of infection. Prostatic tissue and serum from all groups were taken and the hematoxylin eosin (HE) and toloudine blue staining were done.

Results. Standardization of the murine model showed that group using the combination of subcutaneous and intraperitoneally immunization presented a higher levels of prostatitis. The hematoxiline-eosine staining evidenced a greater amount of inflammatory cells and moreover we found lot areas with HPB that has not been reported in this model. Besides, toloudine blue staining showed a greater amount of mast cells.

Experimental treatment phase showed by hematoxiline-eosine staining that Dex and LE groups displayed lower amounts of inflammatory cells in comparison with the Gly group (Fig. 1). Determination of prostateine by ELISA showed that the concentration of this protein decrease significantly in the group treated with the LE.

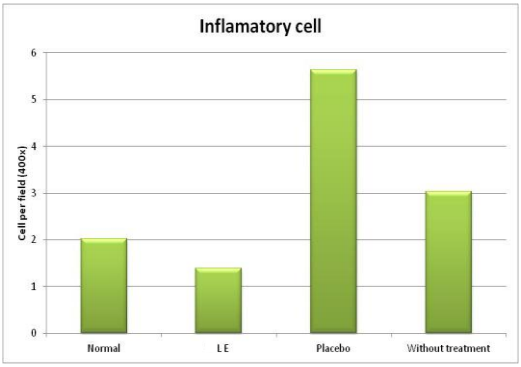

Fig.1 Amount of cell per field in the different experimental groups comparison with non treated groups.

Conclusions. We developed a murine model of EAP characterized for infiltration of inflammatory cells and HPB. The LE decreased significantly the histopathological characteristics of prostatitis and also the serological detection of prostateine.

References.

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