PD20-11
THE ROLE OF INDOLEAMINE 2,3-DIOXYGENASE IN EPIDIDYMIS

Ohira Shin*, Haru Ryohei, Tone Shigenobu, Fujii Tomohiro, Miyajiy Yoshiyuki, Kuribayashi Futoshi, Nagai Atsushi, Kurashiki City, Japan

INTRODUCTION AND OBJECTIVES: Indoleamine 2, 3-dioxygenase (IDO) catalyzes the first and rate-limiting step of tryptophan catabolism and has been implicated in immune tolerance. IDO is known to be induced in various tissue during systematic bacterial infection and play a key role in immune response. In our previous research, we elucidated that epididymal IDO expression in the mouse is restricted to the caput region from segments 2 to 5 with peak of expression in segments 3 to 4. However, the role of IDO in epididymitis still remains unclear. We investigated all sorts of cytokines and analyzed specific function of IDO in epididymitis model using IDO knock out mouse in this study.

METHODS: Twelve weeks old C57BL/6J (wild type: WT and IDO knock-out: IDO KO) male mice were used in this study. Mice were injected with lipopolysaccharide (LPS) 4 mg/g (weight) into epididymis on the side of spermatic cord. At 7 days after LPS injection, epididymis were removed and examined histologically and biochemically by using cytokine assay (ELISA). Histological finding and expression of cytokines, their experiments were duplicated at least.

RESULTS: Regarding HE stain, destruction of epididymal ductal structure and invasion of lymphocyte-predominant inflammatory cells were found in epididymitis model of IDO KO mice compared with WT mice. Comprehensive cytokine assay (ELISA) showed that both chemokines (CCL2, CCL3, CCL4, CCL5, CXCL10) and inflammatory promoting cytokines (IL-1B, IL-2, IL-6, IL-12p70, IL-17, IL-23) were down-regulated in epididymitis model of IDO KO mice compared with WT mice. On the other hand, inflammatory inhibiting cytokines (IL-4, IL-10) were up-regulated. Next, we determined the quantity of IL-6 (ELISA), which is representative marker of inflammatory promoting cytokine. Significant decreased IL-6 expression was statistically observed in epididymitis model of IDO KO mice compared with WT mice (P<0.05).

CONCLUSIONS: IDO is involved in epididymal inflammation by LPS. IDO might be a novel target for the therapy of the epididymitis in addition to antibiotics.

Source of Funding: none

PD20-12
DEVELOPMENT OF A CLINICALLY RELEVANT SYMPTOM INDEX TO ASSESS PATIENTS WITH CHRONIC ORCHIALGIA

Alan Polackwich*, Hans Arora, Jianbo Li, Cleveland, OH; Parekattil Sijo, Clermont, FL; Daniel Shoskes, Cleveland, OH

INTRODUCTION AND OBJECTIVES: Chronic orchialgia is a relatively common but poorly studied condition. Assessment of symptom severity and response to therapy is hampered by the lack of a disease specific validated symptom instrument. The purpose of this study was to develop a candidate symptom index for men with an established diagnosis of chronic orchialgia.

METHODS: Based on clinical interviews with patients and providers, we developed a 70 item questionnaire that focused on 7 areas of orchialgia symptoms: pain, location, urinary symptoms, sexual dysfunction, medical history, surgical history and quality of life (QOL) impact. The questionnaire was completed by patients at 2 medical centers complaining of bothersome scrotal content pain for at least 3 months in the absence of current pathology. Cluster analysis was performed with the software package R (3.2.1).

RESULTS: 113 men completed the survey. Median symptom duration was 12 months (range 3-336) and average pain level was 4.2/10. In addition to the testicle, pain was felt in the spermatic cord (66%), groin (66%), pen (24%), suprapubic region (38%), flank (31%), thigh (32%), abdomen (36%) and perineum (35%). Bother scores were high only for testicle and spermatic cord locations. 54% had urinary frequency but urinary symptoms were not bothersome. 55% had erectile dysfunction, 56% had decreased libido and 39% had painful ejaculation. Past history included epididymitis in 30%, vasectomy 45%, prostate surgery (36%), abdominal surgery (36%) and appendectomy (35%). Bother scores were high for all. Pain levels were not different for those with post vasectomy pain. For QOL, pain most impacted work and interference with enjoyable activities. By cluster analysis, QOL parameters clustered tightly with minimal pain level, pain at night, burning pain, distribution to spermatic cord and groin, erectile dysfunction and premature ejaculation. A separate distinct cluster of urinary symptoms, penile and perineal pain, thigh pain, pain with ejaculation and genital numbness suggested a subset of patients with pelvic floor spasm.

CONCLUSIONS: Men with chronic orchialgia have a high incidence of associated symptoms. Most bothersome symptoms with highest QOL impact include burning pain, pain at night, radiation to groin and spermatic cord, erectile dysfunction and low libido. A cluster of symptoms typical for pelvic floor spasm suggests a subset of patients not suitable for local testicular therapy. Based on these findings, we have created a candidate orchialgia symptom index with domains of pain, sexual symptoms and QOL that will undergo prospective validation.

Source of Funding: none