

*Materials of Conferences***STUDY OF STATUS OF VITAMIN D IN CASE OF DEGENERATE AND DYSTROPHIC DISEASES OF JOINTS**

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Osteoarthritis (OA) takes a leading place in the structure of diseases of locomotor organs. Roentgenological symptoms of OA manifest themselves at more than 85% people older than 60 years and clinical ones are evident at 12 (1,2). Studies of this aspect of osteoarthritis in Kazakhstan were not conducted.

The aim of the given research is study of the content of vitamin D at patients affected by osteoarthritis.

Materials and Methods

Research was conducted at the arthrology department of Astana Research Institute of Traumatology and Orthopedy. Forty six patients were examined, their average age being $58,4 \pm 3,6$ years. OA was diagnosed on the basis of unified criteria worked out at the Institute of Rheumatology RAMN. Roentgenological criteria according to Kellgren J. H. and Lawrence J. S. were used.

Patients were divided into 3 groups. The first group consisted of women with OA disease still having menstrual cycle (n=8). The second group was presented by women with OA disease in menopause (n=24). The third group consisted of men with OA disease at the age from 40 to 72 years (n=14). Control group consisted of practically healthy people (n=10). Vitamin D was defined by the method of immunofluorescent analyses. Research was conducted at the laboratory of clinical immunology according to instructions of the producing company.

Results and Discussion

As it is known, involutive changes in bones and joints seriously affect the course of OA and there is a direct correlation between the age of a patient and heaviness and prognosis of a disease. The total number of patients was 46, more than a half of them being older than 60. According to assessment of functional defect of joints patients having II and III stages dominated.

Average value of vitamin D concentration in patients having menstrual cycle was $38,1 \pm 5,8$ nmol/l, it was 49% lower than in a control group ($66,6 \pm 15,5$ nmol/l; $p < 0,02$). It was stated that 19 patients in postmenopause group had $35,01 \pm 7,5$ nmol/l, which was lower than in a control group ($p < 0,001$). In the third group 9 male (64%) showed reduction of vitamin D, average value of vitamin D concentration for men was $34,9 \pm 21,5$ nmol/l which differed statistically from the control group ($p > 0,5$). Deficit of D vitamin manifesting clearly for elderly people may be explained proba-

bly by insufficient exposure to sunshine and decreasing skin ability of synthesis of vitamin D (2,6). Anomalies of this kind are not compensated by the substances entering inside with the food, as dairy products do not contain sufficient quantity of vitamin D. Deficit of vitamin D accompanies and complicates the deficit of calcium which is also common for a large number of elderly patients. It is evident, that a category of patients under observation does not reflect condition of all patients in a full degree, however it represents some kind of a "model" of a high risk group, exposed to not only osteoporosis but osteoarthritis as well(3,4,5).

Thus, it was stated that the majority of examined patients with degenerate and dystrophic diseases of joints had deficit of vitamin D which speaks in favour of conducting substituting therapy, caused by vitamin D deficit.

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BIOCHEMICAL MARKERS OF THE BONE METABOLISM UNDER OSTEOARTROSIS

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A problem of osteoarthritis (OA) has got a special medical and social significance due to the growth of this disease (1). Nevertheless, condition of bone metabolism at OA is not properly studied. It is known that osteocalcin (OCC) is synthesized by osteoblasts. OCC is growing in the period of menopause. It is correlated with the decrease of mineral density of osseous tissue in a lumbar section of a spinal cord.

Materials and Methods

The given research was conducted at the arthrology department of the Research Institute of Traumatology and Orthopedy. The group under research consisted of 46 patients with OA. Their average age was 58, $4 \pm 3,6$ years. Patients were divided into 3 groups: female patients still having menstrual cycle (the first group; n=8); female patients in postmenopause (the second group; n=24) and male patients with OA (the third group; n=14). Control group included practically healthy people (n=10). Studies of OCC content were conducted in laboratory of clinical immunology of NIITO according to producer's instructions.

Results and Discussion

The levels of serum OCC were evaluated at 32 women (8 with menstrual cycle and 24 in postmenopause, not treated with glucocorticoids) and at 14 men.

Initially, the level of OCC for women having menstrual cycle was higher for one patient (12, 5%); for other patients it corresponded to a norm, decrease of OCC level was not observed. In the second group four women (20, 8%) in menopause (duration from 8 to 18 years) showed increase of OCC level and had a lot of injuries of joints (from 12,6 to 16,6; ESR from 16 to 20 mm/h). An average level of OCC in general was $-19,6 \pm 5,1$ ng/ml; for women with menstrual cycle - $21,26 \pm 3,075$ ng/ml; for women in postmenopause - $26,4 \pm 6,3$ ng/ml, these differences statistically being reliable in comparison with patient's age (according to R. Spirman=0,40; $p=0,020$). The level of alkaline phosphatase at the initial stage of observation was normal at 38 (82, 6%) female patients, a slight decrease was noted at 8 (17,4%) cases; increase of alkaline phosphatase was not observed. Six from 24 female patients with the observed decrease of alkaline phosphatase were in postmenopause (duration from 6 to 12 years). Comparison of initial level of markers of osseous exchange to clinical and laboratory data characterizing OA was conducted. The level of OCC in general did not correlate with laboratory data for OA.

Thus, according to data collected in the process of research the level of marker of osseous formation - OCC increases in the group of women in postmenopause having OA, reflecting the growth of intensity of osseous exchange in general. For women in postmenopause, probably, it is initiated because of hormonal disturbances. According to these data the increase in level of marker of osseous formation is associated with the decrease of mineral density of osseous tissue.

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IMMUNE RESPONSE TO BENZO(A)PYRENE IN LUNG CANCER PATIENTS

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In our previous works we studied the presence of antibodies (AB) to fluoro-methyl-benzaanthracene conjugate - bovine serum albumin (FMBA-BSA) in healthy people, breast, gaster, large and straight intestine cancer patients. We managed to detect the antibodies of all the three classes of immunoglobulins and also to find out clear isoallotypic differences in the formation of AB to FMBA-BSA between healthy and sick people; between various organs cancer patients;

between one focalization, but various course forms cancer patients.

The purpose of the present work is to study the presence of antibodies to the benzo(a)pyrene - bovine serum albumin (BP-BSA) conjugate in lung cancer patients (LC), to define their isoallotypic features, the ratio of the AB classes at this pathology and to try to define the diagnostic value of these factors.

The blood samples of 110 males - LC patients and 100 healthy males without any lung diseases in the past medical history served as the test material for this research. The serum was separated from the whole blood and frozen at -70°C , then the definition of antibodies to BP-BSA by means of the modified immunoenzyme method developed in our laboratory was carried out. The obtained results were expressed in relative value units (RVU/ml).

The studies were carried out using the reagents of the DakoCytomation firm (Denmark) and the "Humareader" (USA) and "Pikon" (Novosibirsk, Russia) firms' equipment.

As a result of the carried out research it was found out that the blood serum of both LC patients and healthy males contained A, G, M classes' antibodies to the BP-BSA conjugate. Their content in the experimental and control groups authentically differed in all the three classes of immunoglobulins. In the LC patients the IgG antibody level is considerably higher, than that in the control group, a different picture being observed for the IgM antibodies.

At the analysis of the AB formation character in the smoking males it was found out that authentic differences between the control and experimental groups were observed for the IgG and IgM antibodies. In the non-smokers authentic differences retain only for the IgM antibodies. No dependence on the stage of the disease concerning the content of the antibodies to BP-BSA was registered.

On the ground of the obtained results we introduced a relative factor - the ratio of the IgG antibody level to the IgM antibody level. In the result of comparison of the experimental and control groups in this factor it was found out that in case of the lung cancer development its value increases almost by an order in all the groups considered.

References:

1. Every one of the examined people, either sick or healthy, has G, M and A classes' antibodies to BP-BSA in blood.
2. Authentic differences between the lung cancer patients and healthy males are detected in all the three classes in the general group, in IgG and IgM - in the group of smokers, in the IgM - in the group of non-smokers.
3. In the course of carcinogenesis an IgG antibody level increase and IgM antibody level decrease occur.