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OUR EXPERIENCE IN THE DIAGNOSIS OF CHLAMYDIAL INFECTIONS

V. Yonkova, M. Yakov,* K. Atanasov

Department of Microbiology and Virology; *Department of Obstetrics and Gynaecology, Higher Institute of Medicine, Varna

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Chlamydial infections transmitted by a sexual manner are rather widespread in developed countries with a moderate climate and most often lead to secondary sterility [1-7]. According to Sarov et al. [7], Chlamydiae affect yearly over 500 mill individuals and thus are the etiological agents of numerous inflammatory genital tract diseases (gynaecological diseases, non-gonococcic urethritis in males, Reiter's syndrome, Wilson-Mikity's syndrome, etc.

Diagnosis of Chlamydia infections is carried out be means of microscopical, electron-microscopical, cultural and serological examinations. The increased serum level of specific immunoglobulins of both classes - Ig A and Ig G - against Chlamydial antigen "L_2" presents a marker of infection in the serological diagnosis.

MATERIAL AND METHODS

A group of a total of 305 individuals consisting of various patients' contingents (females with inflammatory gynaecological diseases, males with non-gonococcic urethritis and polyarthritis) has been investigated. A parallel control group of clinically healthy persons has been also examined. Cervical and urethral secretions were used to infect cellular cultures of Mac Coy's line after an original method [7]. Lamellae with infected cells were stained with iodine according to a method modified by ourselves. Immunoperoxidase test with kit from the "Savyon Diagnostics" firm kindly provided by Prof. I. Sarov from Ben Gurion University, Israel, was used to examine serum samples. All positive specimens were additionally electron-microscopically studied on ultrathin sections in order to confirm the diagnosis.

RESULTS AND DISCUSSION

Our data obtained are presented on table 1. It can be seen that the percentage of Chlamydia-positive cases amounts in females to 35,00 per cent and in males to 45,00 per cent. There are no statistically significant differences between males and females ($p > 0,05$) when percentages of positive cases proved in the acute stage of the diseases are concerned.

However, the comparison between our data and these reported by other authors [5,7,8] reveals certain differences, i.e. they establish between 40 and 60 per cent of positive cases in females and between 25 and 35 per cent of positive cases in males. This is probably due to the selection of the patients' groups in our trial. The aforementioned investigators examined a strictly isolated group of females with adnexitis while we analyzed a contingent with a more enlarged spectrum of inflammatory diseases. The higher percentage of positive cases in males is possibly due to the fact that our contingent was selected from specialized rheumatological-cardiological outpatient consulting rooms and that it is presented by patients with articular-painful syndrome combined with non-gonococcic urethritis (Reiter's syndrome). Modern diagnostic methods and purposeful selection of this contingent can explain the high percentage of positive cases.

The comparison of the results from the different stages of infection in male and female patients reveals thet while during the acute stage there are no statistically significant differences between

Table 1

Contingents examined by the immunoperoxidase test for detection of Chlamydiae

Contingents	Total number	Stage of infection		Ig A	IG G	Positive in %
		acute	chronic			
Females	125	21	18	32	39	39
%		16,8 +/-3,36	14,4 +/-3,15*			35,0
Males	80	12	24	36	36	36
%		15,0 +/-4,02	30,0 +/-5,16*			45,0
Controls	100			3	10	3 3,0

*Legend: * - representative error*

two genders ($p > 0,05$) during the chronic one there is a statistically significant difference ($p < 0,05$). In our opinion, it is related to the life cycle of Chlamydia trachomatis as an obligatory intracellular parasite. The etiological agent destroys the cells of uterine and tubar epithelium and localizes in narrow anatomical limits thus evoking complaints typical of female gynecological diseases characterized by exacerbation stages. The agent invades a considerably lower number of epithelial cells after penetration through the urethral epithelium. Then it disseminates by a lymph and blood way affecting the prostatic gland and joint synovial membranes.

The percentade of positive cases in the control group argues for the statement that asymptomatic carr iership in healthy persons can exist, too. Both cultural and electron-microscopic examinations confirmed the positive results obtained by using of immunoperoxidase test. The morphology of cytoplasmic invaginations typical of Chlamydia trachomatis was also observed.

CONCLUSION

Our investigations confirm the broad dissemination of Chlamydia trachomatis and the possibility for specific diagnosis by means of these methods used. Exact diagnosis of Chlamydia infections is very important as the therapeutic approach differs substantially from that applied in the rest urogenital and rheumatological diseases.

REFERENCES

1.**Балабан, С.Я., М.Моторин.** *Ревматология*, 1986, 2,41-43. 2. **Мартинов, С.П.** Проучвания върху някои биологични, морфологични и имунологични свойства на хламидиите. Канд. дис. София, 1983. 3. **Попов, Г.В.** Полово предавани хламидиални инфекции. София, Медицина и физкултура, 1989. 167 с. 4. **Geerling, S.,** et al. *Acta Cytol.*,29, 1985, No 5, 671-675. 5.**Oriel, J.D., G.L. Ridgway.** *Brit. Med. Bull.*, 39, 1983,133-137. 6. **Petzold, D.V.,** et al. *Hautarzt*, 31,1980, No 5,263-267. 7. **Sarov, I.**, et al. *Europ. J. Epidemiol.*, 1, 1985, No 4, p.235. 8. **Thomson, S.E.**, et al. *Epidemiol. Rev.*,5, 1983, 96-125.

НАШ ОПЫТ В ДИАГНОСТИКЕ ХЛАМИДИЙНЫХ ИНФЕКЦИЙ

В.Йонкова, М.Яков, К.Атанасов

РЕЗЮМЕ

Выявление иммуноглобулинов классов А и Г считается рутинным исследованием для установления заболевания, вызванного Хламидия трахоматис. Наряду с другими методами (культуральными, электронно-микроскопскими) впервые использован иммунопероксидазный тест для исследования сыворотки различных контингентов пациентов :женщин с различными гинекологическими заболеваниями, мужчин с негонококовыми уретритами и больных с синдромом Райтера.

Процент положительных по отношению к хламидийной инфекции оказался 35,0 % среди женщин и 45,0 % среди мужчин. Наличие 3 % положительных в контрольной группе потверждает факт существования бессимптомного носительства среди здоровых людей.

Результаты наших исследований подтвердили широкое распространение Хламидия трахоматис и возможность установления специфического диагноза при помощи указанных методов.