

Results of immunofluorescence assay in *Chlamydia trachomatis* infections in infants

Ladislav VÁRADY^{1*}, Lýdia ČISLÁKOVÁ² & Leonard SIEGFRIED³

¹VÁRADY Ltd. – Private Neonatal/Pediatric Centre, Cottbuská 11, SK-04023 Košice, Slovakia; phone: ++ 421 55 6452800, e-mail: neonat@antik.sk

²Institute of Epidemiology, Faculty of Medicine, P. J. Šafárik University, Šrobárova 2, SK-04001, Košice, Slovakia

³Institute of Medical Microbiology, Faculty of Medicine, P. J. Šafárik University, Trieda SNP 1, SK-04011, Košice, Slovakia

Abstract: This study was undertaken to determine the relationship between conjunctivitis and rhinitis/rhinopharyngitis and *Chlamydia trachomatis*, as a possible ethiological agent in infants. We used the method of direct fluorescent antibody staining for diagnosis of *C. trachomatis*. The method utilizes a fluorescein-conjugated species-specific monoclonal antibody to *C. trachomatis* serotype D-K. *C. trachomatis* serotype D-K antigens were detected in smears collected from conjunctiva and nasopharynx of 118 infants (61 infants with clinical symptoms of conjunctivitis and 71 infants with clinical symptoms of rhinitis/rhinopharyngitis) up to the age of six months. The direct fluorescent antibody staining method for *C. trachomatis* D-K antigens was positive in 25 of 61 conjunctivitis cases and in 27 of 71 of rhinitis/rhinopharyngitis cases, i.e. in 40.9% and 38.0%, respectively.

Key words: *Chlamydia trachomatis*, conjunctivitis, rhinitis, infants, direct immunofluorescence.

Introduction

In recent years there has been a significant progress in understanding the importance of chlamydia infections. *Chlamydia trachomatis* serotype D-K is the most frequent sexually transmitted microorganism. This microorganism causes the inflammation diseases of the urogenital tract in both male and female. From the infected pregnant woman it can be transmitted to the infants (GENCAY et al., 2001). Relationship between the vaginal infection of mother and purulent conjunctivitis of an infant was first described by Quellmalz in 1775 (SANDSTROM, 1986). Prevalence of genital infections caused by *C. trachomatis* among pregnant women is variable, depending on individual studies in different countries (SCHALLER & KLAUSS, 2001).

The World Health Organisation (WHO) estimates that 89 million new cases of genital *C. trachomatis* infection occur each year (GERBASE et al., 1998). Some studies coming from the USA define the incidence of chlamydia infections in pregnant women ranging in between 4.0–30.0% (CHANDLER et al., 1977; HAMMERSCHLAG et al., 1979; SIMMS, 2002). Scandinavian studies describe the incidence in between 2.4–4.5% (MARDH et al., 1980, PERSSON et al., 1981). Results from our region show also rather a high incidence both in women,

24.6% (HOLLER et al., 1986), and infants conjunctivitis, 22.6% (PREKOP et al., 1986, VÁRADY & ČISLÁKOVÁ, 2001).

In the individual studies the results correlate with a low socio-economical status of an individual; aged under 23 years, with lower education level (HARRISON et al., 1983). The occurrence of chlamydia infection in the first pregnancy was reported in Swedish study (PERS-SON et al., 1981) as well as in the studies of other authors (e.g. KOVÁCS et al., 1996).

Newborns that are in contact with mother's birth canal can acquire the infection involving mucous membranes, mainly conjunctivitis and rhinitis/nasopharyngitis. Transfer risk varies in between 14–39% in cases of conjunctivitis (HAMMERSCHLAG et al., 1979, PERSSON et al., 1981, SCHACHTER et al., 1986) and 3–33% in case of pneumonia (HAMMERSCHLAG, 1989). Prenatal ascendent infection through intact pellicle is not of a rare occurrence. This gives an evidence of chlamydia infection in a child born by section cesarea (GENCAY et al., 2001).

In the present study we estimated a possible relationship between *C. trachomatis* and some clinical syndromes, i.e. conjunctivitis and rhinitis/rhinopharyngitis, present in infants aged from 5th day after delivery up to 6th month of age.

* Corresponding author