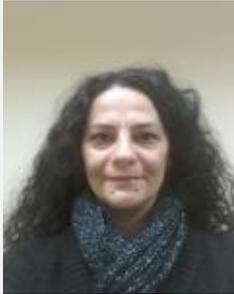


# ImmunoTools *special* Award 2014



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## "IMMUNOPATHOGENETIC MECHANISMS OF CHLAMYDIA PERSISTENCE IN THE GENITAL TRACT OF WOMEN"

*Chlamydia trachomatis* infection is the most common sexually transmitted bacterial infection in the world. Most *C. trachomatis* infections are asymptomatic, therefore remain undiagnosed and consequently untreated. Asymptomatic nature of genital chlamydial infection on the one side, and undetected infection on the other side, allows continuous transmission of infection. In the further course of the disease the recurrent and prolonged inflammatory responses can lead to persistent tissue damage and induce reproductive tract damage.

Our research is related to immunopathogenetic mechanisms that underlie persistent chlamydial infection in subfertile women. We have recently published data about simultaneous measurement of three serological markers of chlamydial infection (IgG and IgA antibodies against *Chlamydia trachomatis* MOMP antigen and IgG antibodies to chlamydial heat shock protein 60 (cHSP60) antigen) in women with tubal factor infertility and spontaneous miscarriage. We determined high degree of seropositivity against chlamydial antigens, in our study population. The prevalence of persistent chlamydial infection has tended to be higher in the group of patients with tubal factor infertility than in patients with spontaneous miscarriage. Comparing intensity of serological response to chlamydial infection, we found that the serum levels of all detected antibodies, have been significantly elevated in group of seropositive patients with tubal factor infertility, than in the corresponding group of patients with spontaneous miscarriage. Most importantly, serum level of IgA, as a marker of active infection, was statistically higher in tubal factor infertility group with persistent infection compared with corresponding spontaneous miscarriage group (A. Arsovic, A. Nikolov, P. Sazdanovic, S. Popovic, D. Baskic. Prevalence and diagnostic significance of specific IgA and anti-heat shock protein 60 *Chlamydia trachomatis* antibodies in subfertile women. *Eur J Clin Microbiol Infect Dis* Epub ahead of print <http://dx.doi.org/10.1007/s10096-013-2008-4>)

The impact of the cytokine balance in the context of the immunopathogenesis of persistent chlamydial infection is unresolved and incompletely established. Using Multiplex kit, we also found that the serum concentrations of 13 human cytokines (h IFN- $\gamma$ , h IL-1 $\beta$ , h IL-2, h IL-4,

h IL-5, h IL-6, h IL-9, h IL-10, h IL-12 p70, h IL-13, h IL-17A, h IL-22 and h TNF- $\alpha$ ) were increased in women with tubal factor infertility compared to spontaneous miscarriage group.

Further investigation will focus on the role of different T cell subpopulations in pathogenesis of persistent chlamydial infection. Based on experimental animal models of *C. trachomatis* infection, susceptibility to chronic chlamydial infection is associated with a IL-10 domination, during the course of prolonged *C. trachomatis* infection. For these reasons, the presence and phenotype of T cells (CD4<sup>+</sup> CD25<sup>+</sup> Treg, IL-10 Treg, TR1, IFN- $\gamma$ /IL-10 Th1) and the presence and phenotype of dendritic cells (pDC and mDC) in the cervix and the peripheral blood of the patients will be determined using a cytometer.

**ImmunoTools special** AWARD for **Aleksandra Arsovic** includes 25 reagents

**FITC** - conjugated anti-human CD1a, CD3, CD4, CD8, CD11b, CD14, CD15, CD19, CD56, CD86, HLA-DR,

**PE** - conjugated anti-human CD3, CD4, CD14, CD25, CD80, HLA-DR

**APC** -conjugated anti-human CD3, CD4, CD11c, CD25,

recombinant human cytokines rh IFN $\gamma$ , rh IL-2, rh IL-10, rh TNF $\alpha$

[DETAILS](#)