

## CONTRIBUTIONS TO THE KNOWLEDGE OF TRICHOMONAS VAGINALIS PARASITE IN CURTEA DE ARGEȘ POPULATION

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### Abstract

The present study, conducted in 2008-2010 to the Curtea de Argeș population revealed an incidence of infestation with *Trichomonas vaginalis* of 46.29% on the investigated cases. There are significant differences related to the gender distribution and most cases come from urban areas. The incidence of infested women is higher in comparison with the infested men because the trichomoniasis at men is usually asymptomatic and remains undiagnosed. It is required a training and information campaign in schools, but also an implementation of programs at a national level for the testing of population, especially to identify the trichomoniasis at persons between 15 and 40 years.

Key words: *Trichomonas vaginalis*, parasitization rate, age group, gender group

### 1. INTRODUCTION

*Trichomonas vaginalis* is an anaerobic, parasitic flagellated protozoan, the causative agent of trichomoniasis, a sexually transmitted disease (STD). This primitive eukaryotic organism shows remarkable similarity to primitive anaerobic bacteria (Petřin et al., 1998). This flagellat with five flagella is the most common pathogenic protozoan infestation of humans in industrialized countries, such as USA. An estimated 3.7 million women and men are infested with *T. vaginalis* in the United States. (Soper, 2004). The infestation rates between men and women are the same with women showing symptoms while infestations in men are usually asymptomatic.

Recent data have shown that more than 160 million people worldwide are annually infested by this protozoan. *T. vaginalis* occupies an extracellular niche in the complex human genito-urinary environment (vagina, cervix, penis, prostate gland, and urethra) to survive, multiply and evade host defenses (Harp et Chowdhury, 2011).

The life cycle of *T. vaginalis* is still poorly understood. It is known to exist only as a trophozoite stage that can survive for up to 24 hours in urine, semen, or even water samples.

In Romania, the prevalence is 25-26%, similar to the one found in Central European countries (23-25%) (Rădulescu, 2000).

### 2. MATERIALS AND METHODS

The studies were carried out during January 2008 – December 2010. There were investigated samples in the Laboratory of Parasitology of Curtea de Argeș Hospital from patients with suspicion of trichomoniasis from Curtea de Arges and surroundings. The samples were collected from a total of 270 patients (68 patients in 2008, 90 patients in 2009, 112 patients in 2010).

We focused on the aspects of the *Trichomonas vaginalis* infestation according to the age group, the gender, the provenance group (rural/urban) and to the pregnant women. There were established the following age groups: 15-25 years, 26-35 years, 36-45 years and over 45 years).

During the study, suspicion of trichomoniasis presented 52 pregnant women. The samples of this category of patients were processed separately.

Principle of the method consisted in microscopic examination of motile protozoa in vaginal or cervical secretions, mixed with physiological serum, and Giemsa stain.

### 3. RESULTS AND DISCUSSIONS

During 2008-2010, from all of the 270 investigated patients, only 125 were positively diagnosed regarding the *Trichomonas vaginalis* infestation. The average rate of infestation is 46.29% and the highest rate of infestation, 69.11% observed in 2008 (Fig. 1). The values higher than the national ones are due to the fact that in this town, were investigated only the patients with suspicions of *Trichomonas* infestation, suspicions confirmed.

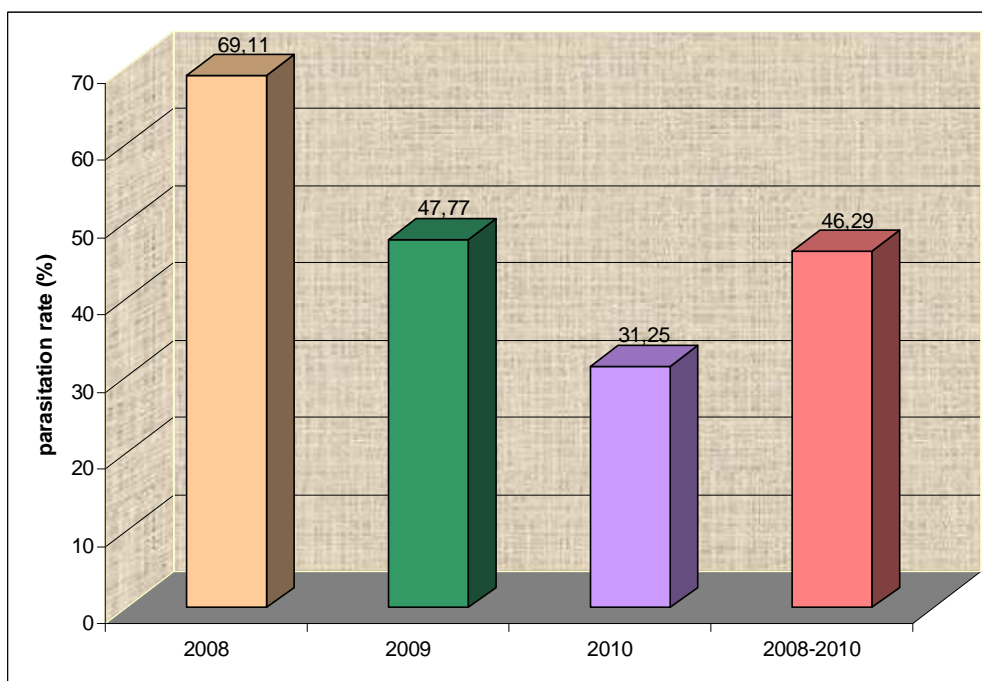


Figure 1. Incidence of *Trichomonas vaginalis* infestation in Curtea de Argeș population

#### a. The aspects of infestation with *Trichomonas vaginalis* depending on the age group

A comparative analysis of parasitizing on age groups during the three years of study, has found that the incidence of trichomoniasis is the highest in the 15-25 and 26-35 years age groups, the average being over 30% (Fig. 2).

This situation is caused by the fact that the 15-35 ages groups have an active sexual life which determines a higher frequency of trichomoniasis, being a sexually transmitted disease.

The age group that overcomes 45 years is less implicated in those infestations due to specific physiological condition (hormonal modifications established during premenopause and menopause).

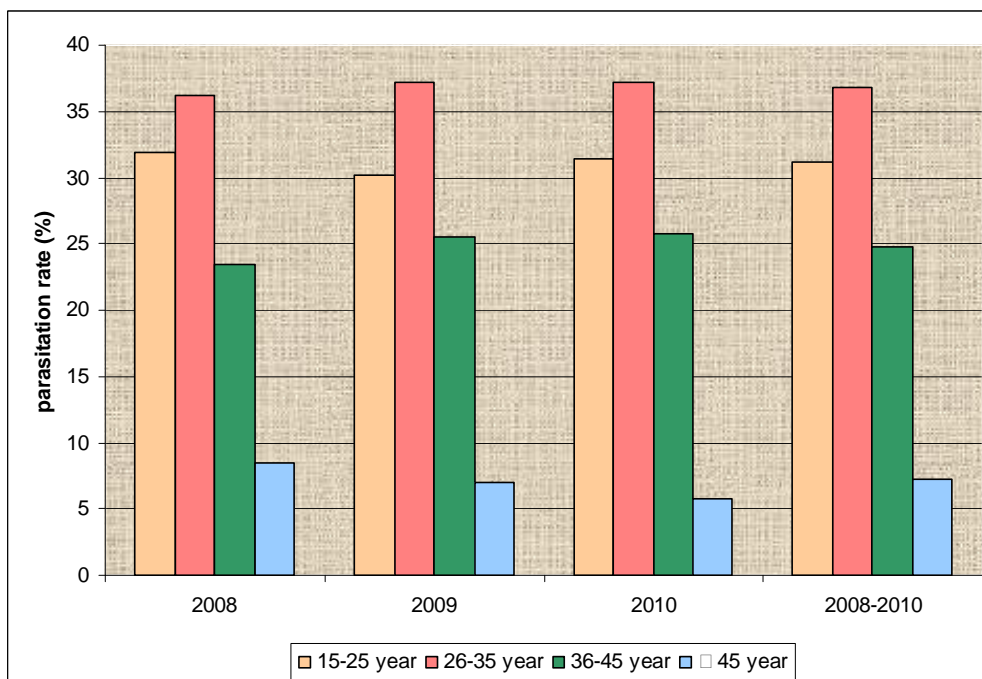


Figure 2. Incidence of infestation with *Trichomonas vaginalis* depending on the age group

#### b. The aspects of infestation with *Trichomonas vaginalis* depending on the gender group

*T. vaginalis* infests both men and women. Comparative values of infestation on the gender group revealed lower values for men, of 8.8%, while the women are much more affected by this parasite (Fig. 3).

This situation is caused by the lack of symptoms of trichomoniasis at most of the men, which leads to a less number of men requesting medical examination.

During this period, the infested patients were found of men that mostly belong to 15-25 age group, when teens are tempted of a chaotic sexual life.

Therefore, the presence of asymptomatic men leads to a higher infestation of trichomoniasis at women.

#### c. The aspects of infestation with *Trichomonas vaginalis* depending on the provenance group (urban/rural)

According to the literature, the number of trichomoniasis cases is less in the rural areas than in the urban ones.

This situation is due to the fact that female patients from the rural areas have less access for a gynecological examination despite urban female patients. In this way, more infested persons are not aware of the infestation.

Therefore, the patients from the urban areas present a rate of infestation of 66.4% compared to the rural patients (Fig. 4).

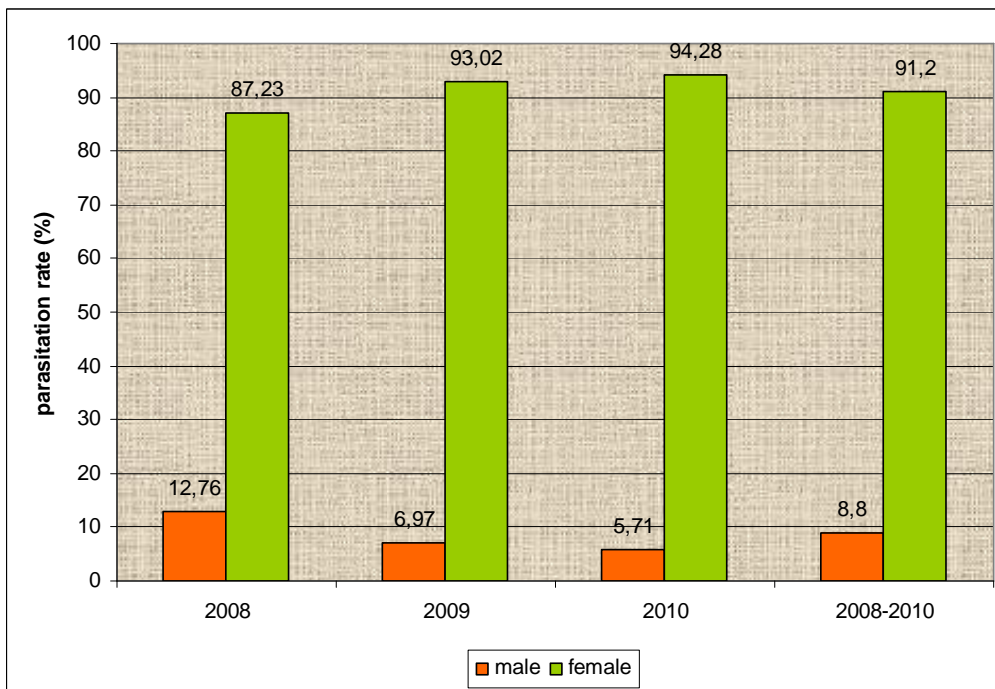


Figure 3. Incidence of infestation with *Trichomonas vaginalis* depending on the gender group in Argeş

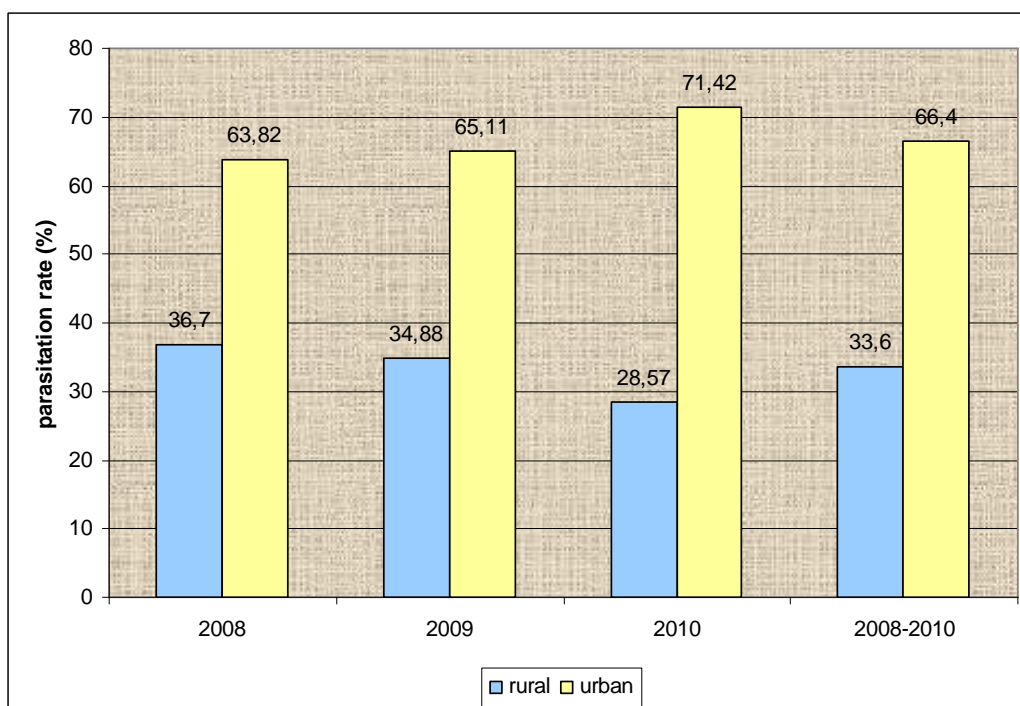


Figure 4. Incidence of infestation with *Trichomonas vaginalis* depending on the provenance group

**d. The aspects of infestation with *Trichomonas vaginalis* in the pregnant women**

During this study, the suspicions of infestation with this parasite presented 52 pregnant women. The investigation confirmed a 40.38% parasitization percentage, the highest value in 2008, and the lowest in 2010.

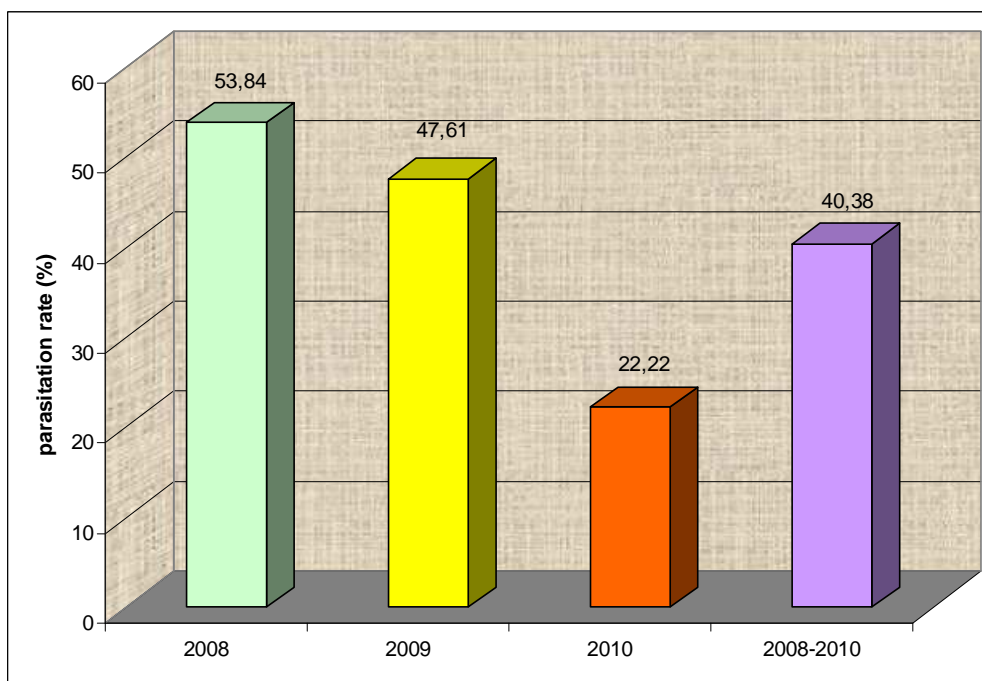


Figure 5. Incidence of infestation with *Trichomonas vaginalis* in the pregnant women

It is required a training and information campaign in schools, but also an implementation of programs at a national level for the testing of population, especially to identify the trichomoniasis at persons between 15 and 40 years.

#### 4. CONCLUSIONS

Regarding patients' distribution between 2008-2010, it is observed a progressive increase of annual investigated cases. So, we can see a higher insistence on the prevention methods and a larger informing about the importance of this examination.

The study revealed an incidence of *Trichomonas vaginalis* infestation of 46.29% on the investigated cases. The most affected ages by this parasite are the ones till 35 years, probably due to an active sexual life.

There are significant differences related to the gender distribution. The incidence of infested women is higher in comparison with the infested men because the trichomoniasis at men is usually asymptomatic and remains undiagnosed.

Given the fact that trichomoniasis is asymptomatic in 20-65% cases is extremely hard to make a real statistical analyze. The sources of infestation are represented by the infested persons with or without clinical symptoms.

#### 5. ACKNOWLEDGEMENTS

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