

Implication of infectious agents in infertility

Melania Iñigo¹, Elena Perugini², Alfonso Beltrán², Lourdes Durango³, Cristina Fernández-Valor³, Luís Chiva^{3*}

¹Clinical Microbiology Department (University Clinic of Navarra), ²School of Medicine (University of Navarra), ³Gynaecology and Obstetrics (University Clinic of Navarra). MADRID (Spain) *Presenting author Ichiva@unav.es

Background and aims:

Infertility is characterized by the inability to achieve a successful pregnancy, taking into account the patient's medical, sexual, and reproductive history, age, physical findings, diagnostic tests, or a combination of these factors. Primary infertility refers to the inability to conceive a first pregnancy, while secondary infertility refers to the inability to conceive a subsequent pregnancy after having previously conceived.

Infertility is a multifactorial condition that can originate from both male and female factors. In many cases, medical intervention is necessary for the couple to achieve pregnancy. One of the potentially treatable causes is female genital infectious pathology. Currently, various infectious agents are known, among which *Ureaplasma parvum* and *Mycoplasma hominis* are two agents whose treatment could benefit patients in achieving pregnancy

OBJECTIVE: To analyze the effect of antibiotic treatment (AMT) in women that are looking for pregnancy and our main outcome is the achievement of the pregnancy after this antibiotic treatment.

Patients and Methods:

In total we collected data from 174 patients who were attended in the fertility consultation of our Gynecology and Obstetrics Department during the period February/2020-November/2021. The variables we analyzed were: type of infertility (primary or secondary), previous births, previous miscarriages, previous ectopic pregnancies, suspected causes of infertility, prior contraceptive use, time since discontinuation of contraceptives, antibiotic treatment, type of antibiotic administered, and achievement of pregnancy.

In some women, microbiological study was performed (bacteriological culture +/- mycological culture +/- PCR STI for detection of *Chlamydia trachomatis*, *Neisseria gonorrhoeae*, *Trichomonas vaginalis*, *Mycoplasma genitalium*, *Mycoplasma hominis* (MH), *Ureaplasma parvum* (UP), *Ureaplasma urealyticum* (UU)).

Results:

174 patients

Median age = 35 years (IQR 32, 38 years; minimum 25, maximum 47)

Primary infertility (78.7%), 26.9% without apparent cause

Several possible causes of infertility in 21.2%

Causes of infertility Figure 1

Median time in search of pregnancy = 18 months (IQR 9, 30 months)

51.2% previously use of contraceptives

Microbiological study performed in 96 cases (55.1%)

Vaginal exudate (91.2%), Endometrial biopsy (6.3%), Endocervical exudate (1.9%)

60.4% positive microbiological result (Microbiological isolates in Figure 2)

47.1% received AMT, in 44% of them pregnancy was confirmed

52.8% not received AMT, in 50% of them pregnancy was confirmed

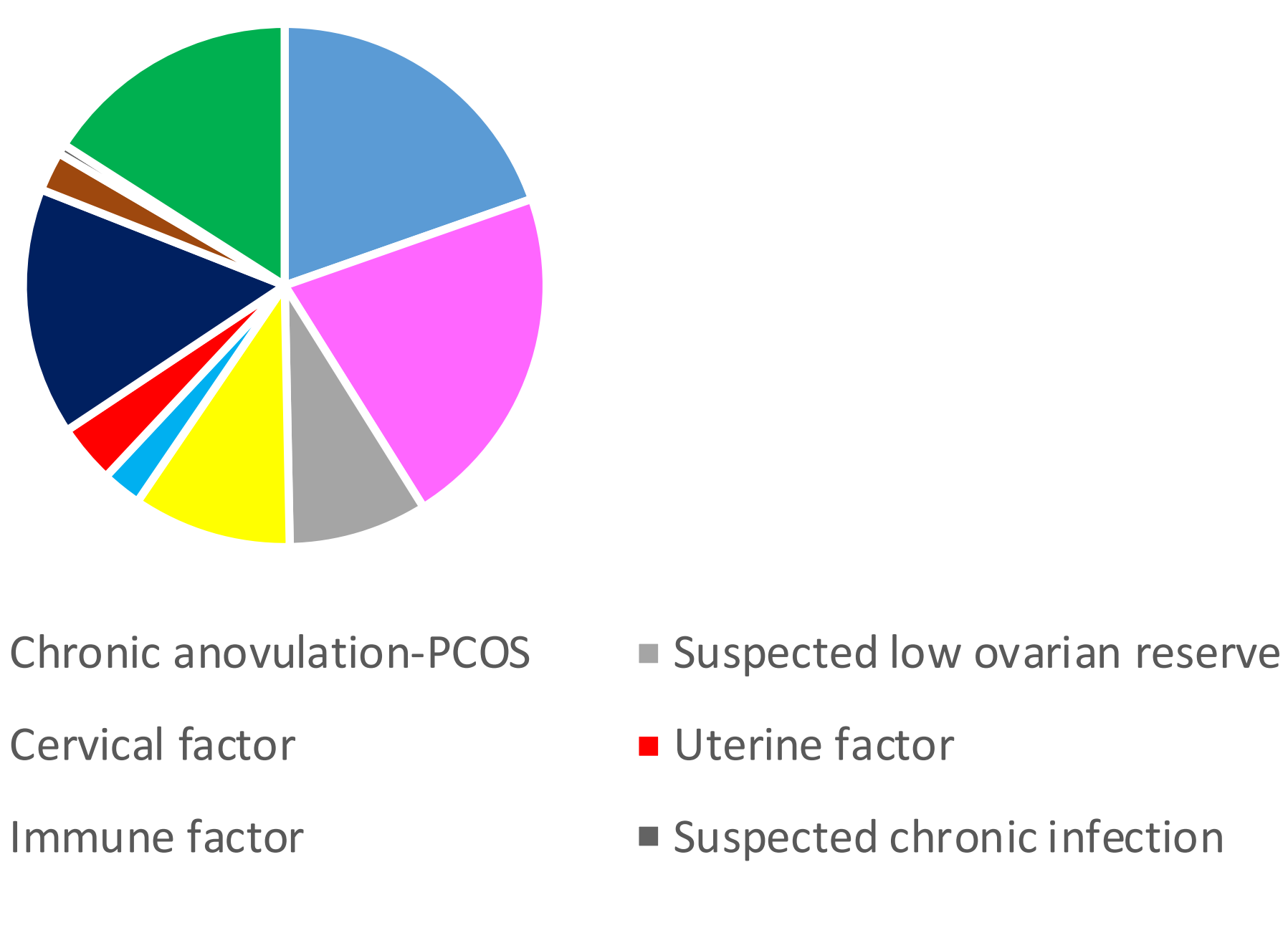


Figure 1. Causes on infertility in total women of the study.

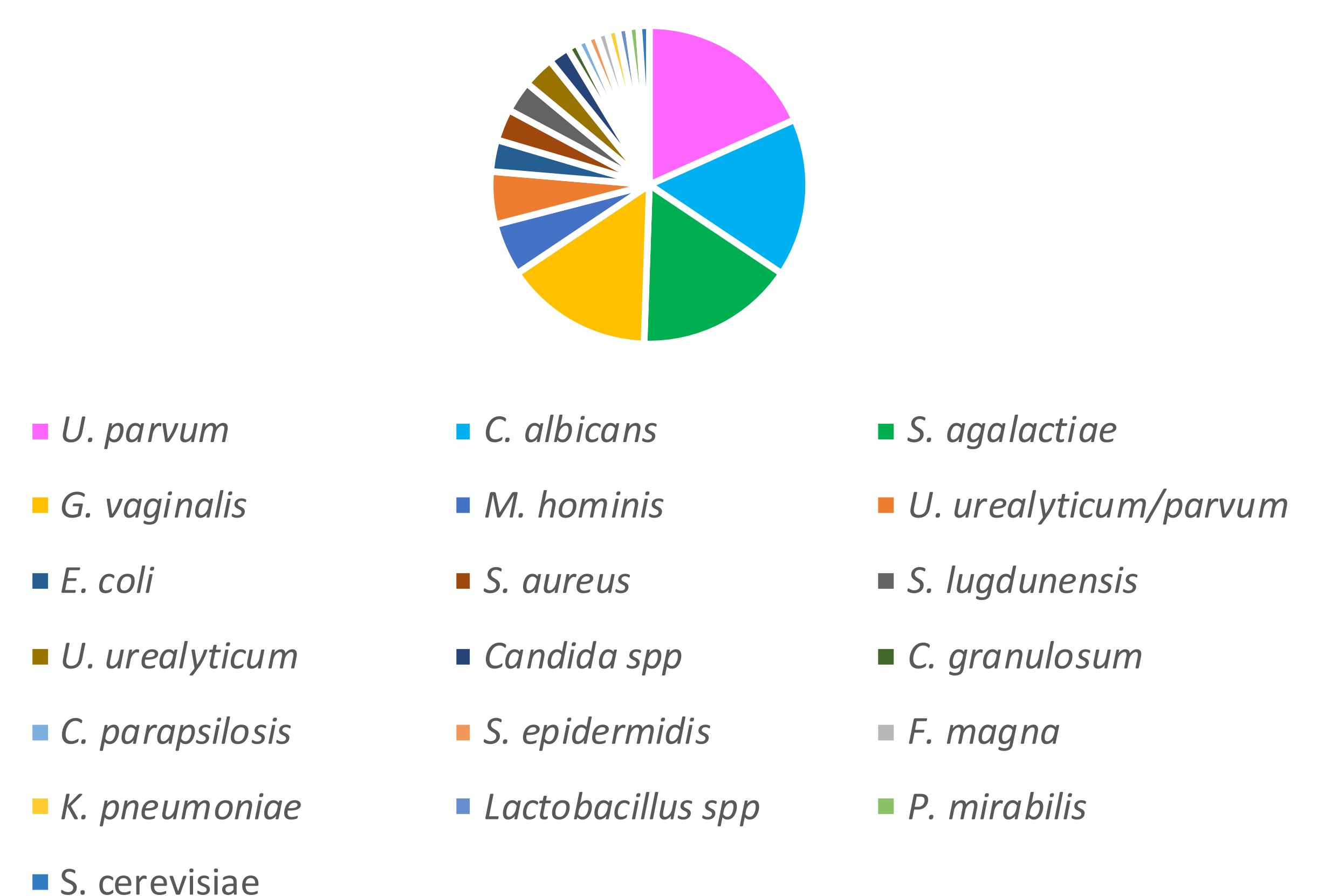


Figure 2. Microbiological isolates in a subgroup of women from the infertility study.

Conclusion: More studies are necessary to assess the implication of microbiological isolates and antibiotic treatment in women who do not achieve pregnancy.

REFERENCES

- Saha RM et al. Bacterial vaginosis and infertility: cause or association? Eur J Obstet Gynecol Reprod Biol. 2013;167(1):59-63.
- Van Oostrum N et al. Risks associated with bacterial vaginosis in infertility patients: a systematic review and meta-analysis. Hum Reprod. 2013;28(7):1809-15.
- Van der Tweel MM et al. Bacterial vaginosis in a subfertile population undergoing fertility treatments: a prospective cohort study. J Assist Reprod Genet. 2024;41(2):441-450.