

PREVALENCE OF CHRONIC ENDOMETRITIS BY CD138 IMMUNOHISTOCHEMISTRY IN ENDOMETRIAL SAMPLE IN WOMEN WITH INFERTILITY : A PROSPECTIVE OBSERVATIONAL STUDY

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INTRODUCTION

- Chronic endometritis (CE) is recognized as unusual plasmacyte infiltration of the endometrial stroma
- It is one of the uterine factors for infertility
- The transmembrane heparin sulfate proteoglycan syndecan-1 (CD138) is a specific marker of plasma cells
- It is proven to be more sensitive in diagnosing CE
- Relevant studies have shown that the prevalence of CE is up to 46% in infertile females
- Assessment of the prevalence of CE in infertile population is important to identify the need for diagnosing CE so that early treatment can positively increase the fertility outcome

OBJECTIVES

- Prevalance of Chronic endometritis
- Risk factors associated with CE
- Reproductive outcome of CE in infertile patients

METHODODLOGY

Patients with infertility screened with inclusion and exclusion criteria

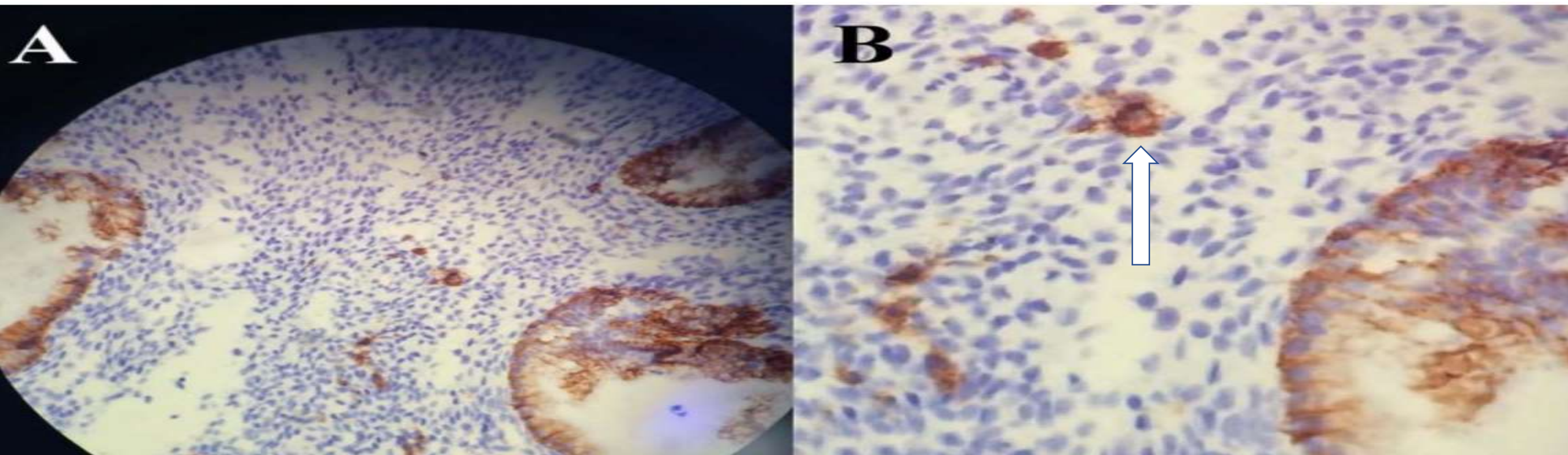
Endometrial biopsy done premenstrually

Sample fixed with formalin 5 % and sent for immunohistochemistry for CD138

Patients divided into 2 groups:CD138 positive and negative

Subgroup Analysis done for various parameters

Main risk factors of chronic endometritis or CD138 positivity were identified and pregnancy outcome in both groups compared

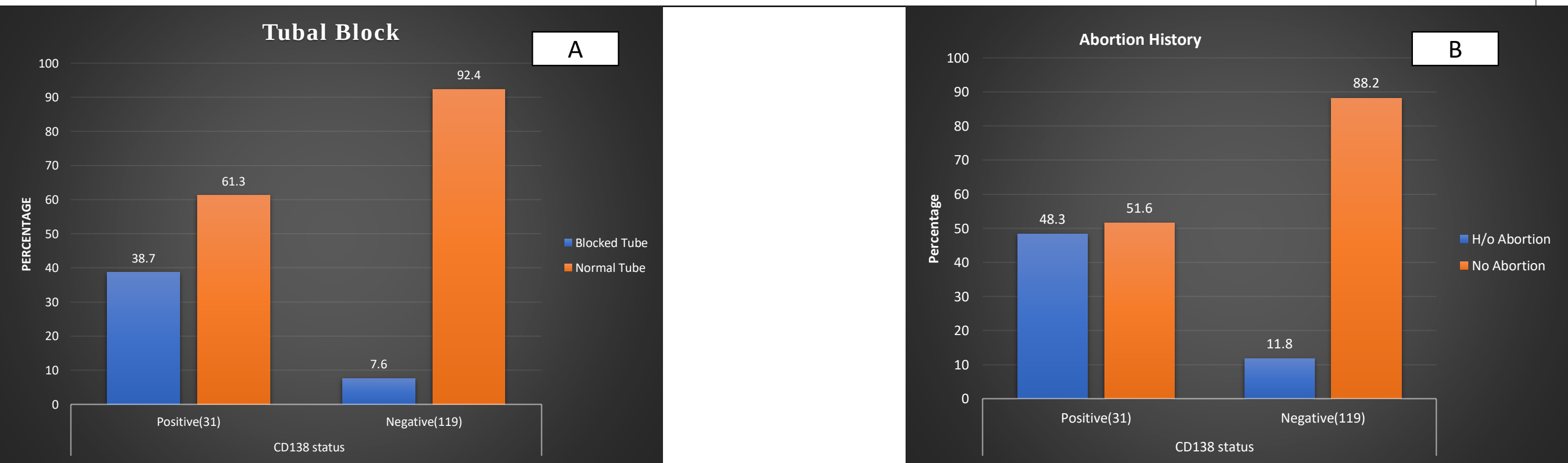
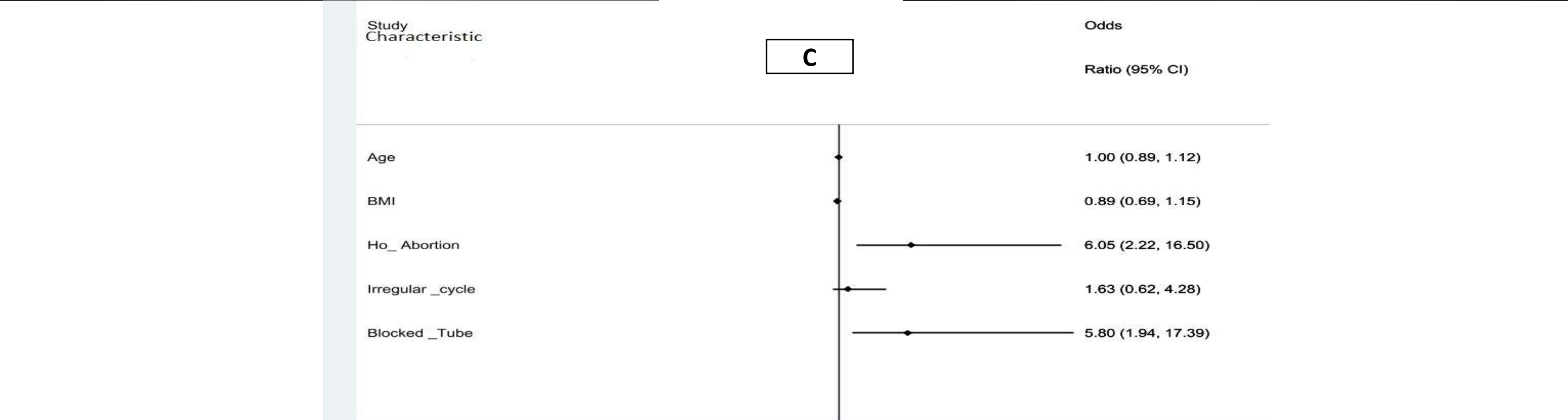


A Endometrial biopsy specimen showing glandular cell surface syndecan 1 immunoreactivity. Plasma cells are syndecan 1 staining in the center of the picture (original magnification: ×400)

B Detailed picture of plasma cell syndecan 1 immunoreactivity.

RESULTS

- The prevalence of CE was found to be 20.7% (95% CI: 14.5 to 28.0)
- Logistic regression analysis confirmed independent risk factors for positive CD138 :
 - History of abortion (P = 0.001, OR = 6.05, 95 % CI 2.22-16.50)
 - Tubal blockage (P = 0.002, OR = 5.80, 95 % CI 1.94-17.39)
- Among CD138 negative patients 13/119(10.9%) became pregnant while none in the positive group but this was not statistically significant (p = 0.071) as the sample size was small



A. Prevalence of tubal block in the study subjects
B. Prevalence of h/o abortion in the study subjects
C. Graph of multivariate analysis

DISCUSSION

- Chronic endometritis results in the disruption of the co-existence between microorganisms and the host immune system in the endometrium leading to the altered implantation of embryos and reduction of endometrial receptivity due to the inadequate secretion of various cytokines
- Majority of CE cases, there are no noticeable signs or mild symptoms
- There is extensive literature about the prevalence of CE in Recurrent Implantation Failure(RIF) and Recurrent Pregnancy Loss(RPL) patients
- CE is a gynecologic condition that must not be ignored in the context of infertility and assisted reproductive treatment (ART)
- Studies have shown that treatment of CE improves pregnancy outcomes in females with RIF and RPL

Table 1: Prevalence of chronic endometritis reported in the literature

Study	Study Population	Diagnostic Criteria	Prevalence
Cicinelli et al 2005 Italy	Unexplained Infertility	>1 Plasma cell/section	30% (n=150)
Kitaya and Yasuo et al 2010 Japan	Unexplained Infertility	≥1Plasma cell/10HPFs	29%(22/76)
Kasius et al (2011) Belgium	Infertility	≥1Plasma cell/section	3%(17/606)
Kitaya et al (2012) Japan	Infertility	≥5Plasma cell/20 HPFs	44%(23/52)
Present study, India	Infertility	≥1Plasma cell/10HPF	20%(31/150)

CONCLUSION

- There is high prevalence of CE in infertile population
- Screening to be done in high risk population
- Prompt diagnosis by CD138 IHC can result in early treatment before subjecting patient to costly ART techniques

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