www.jmscr.igmpublication.org
Index Copernicus Value: 79.54
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: https://dx.doi.org/10.18535/jmscr/v7i6.59

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

Study of Histochemistry of Endometrium in Infertility

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Abstract
A study of histochemistry of endometrium in infertility was done in department of gynae and obstetrics Skims soura.50 cases of infertility both primary and secondary were studied during period of one year. Premenstrual Endometrial biopsy was done and specimen was stained by H and E stains.
Aims and Objectives
1) *To study histochemistry of endometrium in infertility*
2) *Their chances of achieving a successful pregnancy.*
Inclusion Criteria
All cases of infertility both primary as well as secondary
Results: *Total no. of cases taken were 50.those with primary infertility were 80% and those with secondary infertility were 20%.Maximum patients were in age group of 20-30 years. Morphorlogical changes noticed were Secreatory endometrium in 64% of primary and secondary infertility. Proliferative anovulatory in 13 cases, 26% of primary and secondary infertility, cystoglandular in 8%(4cases) and Tubercular endometritis in 2%(1 case)*
Conclusion: *Premenstrual Endometrial biopsy is thus important tool in assessing morphological changes of endometrium in infertility.*

Introduction

Infertility is a worldwide problem. Approximately one marriage

In ten is barren, sophia[(1)]. Endometrial biopsy is one of the tools to assess morphological changes of endometrium in infertility[(2)]. our topic of research is to study histochemistry of endometrium in infertile patients in department of gynae and obstetrics in Skims soura.

Endometrium is prepared for implantation of fertilised ovum under the influence of various hormones. Estrogen is main hormone in proliferation and progesterone in secretary phase, these two lead to transformation and decidualization of stroma[(3)]. However in patients who have infertility this sequence of events is not followed leading to various morphological changes in endometrium. Today approximately 48.5 million couples in world are infertile[(4)] In

India there is estimated 10.2 million cases of infertility[5] The purpose of investigating infertile couple is to identify cause of infertility and to assess their chance of achieving a successful pregnancy

Material and Methods

This study was carried in department of obstetrics and gyneacology at skims soura. 50 cases of infertility that include both primary and secondary infertility were taken during period of (12 months) September 2017_August 2018. Detailed clinical history regarding menstruation, last menstrual period, age of menarche and obstetric history was taken. A detailed clinical examination was done. Premenstrual Endometrial biopsy was done on day 22 _23 of cycle. Specimen was fixed in 10 percent buffered formalin and sent to pathology department of Skims soura were in laboratory further processing was done[6,7]. Micron sections were cut and stained with hematoxylin (H) and eoisin (E) for morphological studies. Endometrium was dated based on criteria given by Dallenbach and Hellweg[8].

Observations

Results were as below

Total no.of cases of infertility=50

Those with primary infertility=40(80%)

Those with secondary infertility=10(20%).

Maximum no.of patients were in age group=20_30years

Duration of infertility in primary infertility cases was 2_3years

Duration of infertility in secondary infertility cases was 6_7 years

Menstrual problems were seen in 10 cases of primary infertility and 5 cases of secondary infertility.

Morphological Changes of Endometrium were Analysed as Below

Histological diagnosis	Primary infertility	Secondary infertility	Percentage
Normal secreatory endometrium	25 cases (62.5%)	7 cases(70%)	32 cases(64%)
Proliferative anovulatory	11 cases(27.5%)	2 cases(20%)	13 cases(26%)
Cystoglandular hyperplasia	3 cases(7.5%)	1 case(10%)	4 cases(8%)
Tubercular endometritis	1 case(2.5%)	_	1 case (2%)
Grand total	40 cases	10 cases	

Thus morphological changes were;

Secretary endometrium in 32 cases (64%) of primary and secondary infertility. 25 cases of primary infertility and 7 cases of secondary infertility.

Proliferative anovulatory endometrium in 13 cases (26%). of primary and secondary infertility.11 cases of primary infertility and 2 cases of secondary infertility.

Cystoglandular hyperplasia in 4 cases (8%)

Tubercular endometritis in 1 case (2%)

Discussion

Human endometrium is important site in nidation of young fertilised ovum[9]. Our study is mainly based on evaluating the growth of endometrium depending on the correlation between menstrual history and Endometrial morphology.

For successful implantation of blastocyst and continuation of pregnancy a favourable endometrial bed is essential that inturn depends on adequate follicular development and normally functioning corpus luteum.[10]

In an infertile patient Endometrial biopsy cannot be interpreted without detailed clinical examination and menstrual history. large no. of biopsies show normal secreatory endometrium which is normal but gains significance only in view of last menstrual period (LMP) by which we can diagnose luteal phase defect (LPD) that is defined as lag of two days between histological dating of endometrium and day of cycle and it's diagnosis is based on Jones criteria[11]. Thus we make sure that our study of Endometrial biopsy is done on 22nd or 23rd of cycle.

Secreatory endometrium is seen in 64%of cases this is comparable to studies carried out in Nigeria 68% [12] and 56%[13].

Many of Endometrial biopsies were abnormal (36%) that were detrimental for implantation of ovum. These abnormal patterns of endometrium are:

1.Anovulatory endometrium 26%
2.cystoglandular hyperplasia 8%
3.Tubercular endometritis 2%

Anovulatory endometrium forms major cause of infertility in our study, this matches with various studies given below.

	Anovulatory endometrium	Ovulatory endometrium
Shetty 1959(14)	15.2%	74.8%
Gupta etal 1980(15)	22.8%	68.5%
Sareen 1984(16)	19%	79%
Jadhav and raichur1987(17)	25%	75%
Sabharwall1987(18)	12%	84%
Krishnamohan etal 1993(19)	10%	87.5%
Neil shastrabudhe 2001(20)	34.2%	62.3%
Our study	26%	64%

Tubercular endometritis forms 2% cases of infertility and cystoglandular hyperplasia forms 8% cases of infertility.

Rani PR[21] found that most common site of involvement in genital tuberculosis is endometrium 46. 6%.

Manjiri[22] Kumar A[23] Nagpal M[24] found involvement of endometrium in 86.66%, 50%and 60% respectively in patients of genital tuberculosis.

In our study tubercular endometritis is seen in 2% cases. similiar such studies are:

NANDITA B(25) =79.04%
TRIPATHY (26) =58%
ZAWAR etal= 2.6%
SATHE etal=6%
SCHAEFER = 5.1%
GUPTA etal (27)= 8.7%
SAREEN (16) =2%
SABHARWAL(18)=1.34%
P.CHAKROBORTY = 6.2%
R.MISHRA = 4.9%
SHASTRABUDHE (20) =2.6%

Endometrial hyperplasia due to excess estrogen can also prevent pregnancy, this is known as cystoglandular hyperplasia seen in 8% cases in our study.

Similar such studies are:

Gupta et al[15], sabharwal[18] Krishna Mohan[19] and shastrabudhe[20] found cystoglandular hyperplasia in 5.9%,2.66%,4.4% respectively.

Conclusion

Premenstrual Endometrial biopsy is thus important safe and cheaper diagnostic tool in case of infertility as it helps in histopathological examination of endometrium in case of both primary as well as secondary infertility.

Hormonal disturbances if present in patients are reflected in the endometrium in form of anovulatory cycle, inadequate proliferative/ secreatory phase and intrinsic abnormalities like endometritis.

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