

# Systematic review on the global prevalence of genital TB in infertile women

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**Dr. Neeta Singh**

Assistant Professor  
All India Institute of Medical Sciences,  
New Delhi, India  
IAMANEH Scholarship

**Tutor: Ana Pilar Betran**

Making Pregnancy Safer  
WHO Reproductive Health & Research  
Geneva



# Outline

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- ◆ Conclusion
- ◆ Future research agenda
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*All India Institute of Medical Sciences New Delhi*



*King George Medical College*

# Why this research question?

- ◆ Genital TB as most frequently observed cause for female infertility in India





# Background

## Global Prevalence

**1995: 22 million cases**

**Now > 1.86 billion cases**

**Prevalence increased due to emergence of  
resistant strains and HIV**





# Magnitude of problem

- ◆ **TB an infectious disease**
  - ◆ **Significant mortality & morbidity**
  - ◆ **According to WHO report**
    - > 3million/yr die due to TB
    - >14million people suffering from TB are in reproductive age group
- (Reproductive Health issue)**

# Infertility


## Extent of problem?

**26.2% of couples in Europe reported problems in getting pregnant**

- ◆ **Overall 1 in 6 couples seek help for infertility**
- ◆ **8 countries have infertility rates > 30%**

**(Source :DHS survey)**





**Approx. 186 million  
couples are infertile in  
world (excluding China)**

**(Source :DHS survey)**





# Impact of Infertility

- ◆ **Right to choose the number of children**
- ◆ **Personal (Burden for women)**
- ◆ **Right to form families**
- ◆ **Socio-economic (Divorce)**
- ◆ **Health (Long term health effects)**

# PATHOGENESIS

**Pulmonary TB**

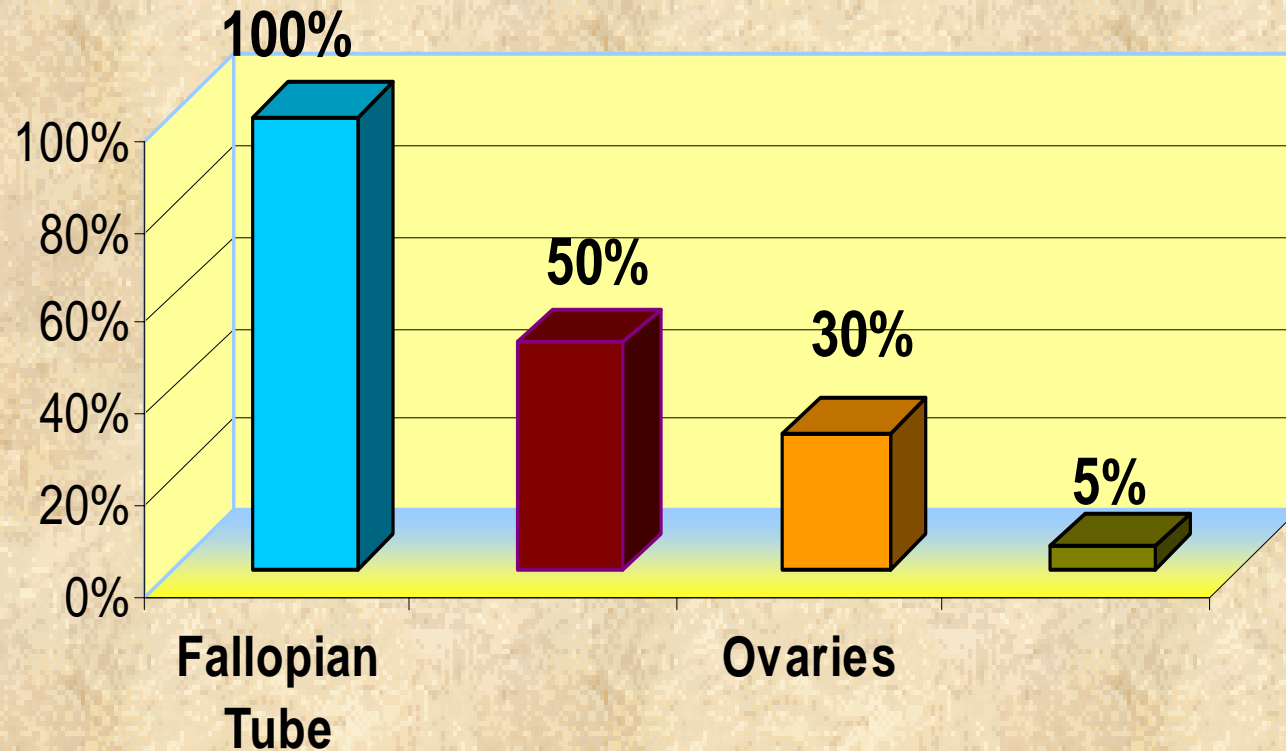


**Hematogenous spread**

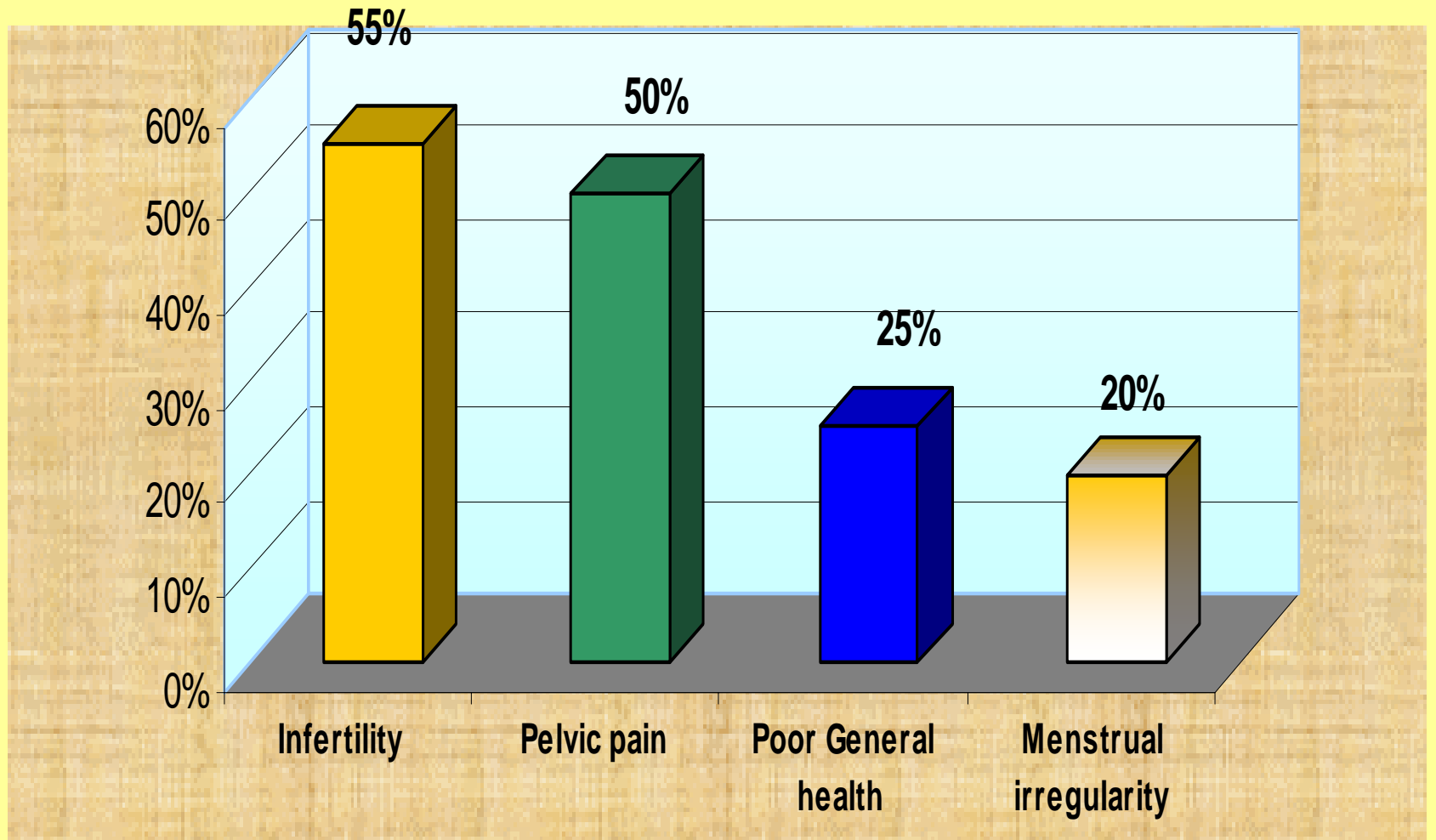
**Genital TB**



# Sites of involvement in Genital TB



# Major Symptoms of Genital TB





# Objectives

- ◆ **To provide comprehensive and reliable information on available data on global prevalence of genital TB in infertile women of reproductive age**
- ◆ **To evaluate the best method for the diagnosis of genital TB**
- ◆ **To identify further research needs to bridge the gap in the knowledge**







# Methods of Review

- ◆ **Electronic: Pubmed, Embase, Liliacs, WHO regional databases**
- ◆ **Manual search of references from original articles**

**Mesh words: Genital Tuberculosis, AND OR Infertility**

**Inclusion criteria: All studies linking genital TB with infertility from 1985-2006, English**

**Exclusion criteria: case reports, brief communications**

**Total of 293 articles were retrieved, only nine were eligible for the review**

# Table 1: Studies included for the Systematic Review

S.No.	Author Year	Country	Study Design	Age of Participants	Setting Sampling Frame	Sample Size	Method of Diagnosis		Outcome prevalence Genital TB
							Genital TB	Infertility	
1	De Vynck 1986	South Africa	Cohort	20-42yrs	Hospital Mixed socio-economic group	451	Menstrual blood culture	HSG Laparoscopy	7.9%
2	Riccardo 1984-88	Italy	Retrospective analysis Of cohort	Not defined	Hospital	326	Endometrial culture & Histopathology	Laparoscopy	1.2%
3	Oosthuizen 1990	South Africa	Cohort	Not Defined	University Hospital High socio Economic group	109	Menstrual blood culture Endometrial culture	By History Not Defined	21%
4	Margolis 1986-88	South Africa	Cohort	20-40yrs	University Hospital	650	Menstrual blood culture	HSG Laparoscopy	6.1%



5	Stefan Csordas 1981	Australia	Retrospective analysis	Not defined	University Hospital	181	Endometrial culture & Histopathology	By history Not Defined	0.16%
6	Hatami 2005	Iran	Retrospective analysis	Mean age 31Yrs	University Hospital	54-	Endometrial culture	HSG By history	7%
7	Namavar 2001	Iran	Retrospective analysis	Mean age 30.4yrs	University Hospital	3088	Endometrial culture	By history	1.32%
8	. Parikh 1997	India	Retrospective analysis	25-35yrs	Private Hospital	300	Endometrial culture & Histopathology	Laparoscopy & Hysteroscopy	39%
9	Tripathy 1988- 2001	India	Longitudinal Prospective	Mean Age 30yrs	Private & Public Hospital	97	Endometrial culture	HSG, Laparoscopy	3%

# Prevalence Rates

S.No	Author	Year	Country	Prevalence Rates
1	Stefan E.Csordes	1981	Australia	0.16%
2	De Vynck	1987	S. Africa	7.98%
3	Riccardo Marana	1988	Italy	1.2%
4	K Margolis	1988	S. Africa	6.1%
5	A.P Oosthuszen	1998	S. Africa	21%
6	Parikh et al	1994	India	39%
7	Tripathy & Tripathy	2001	India	3%
8	Jahromi B. Namavar	1999	Iran	1.32%





<b>Author</b>	<b>Method used for diagnosis of genital TB</b>				
	<b>MENSTRUAL BLOOD CULTURE</b>	<b>ENDOMETRIAL CULTURE AFB</b>	<b>ENDOMETRIAL HISTOLOGY</b>	<b>PERITONEAL FLUID CULTURE</b>	<b>SEROLOGY</b>
<b>DE VYNCK</b>	++	+	+	--	--
<b>RICARDO</b>	-	+	+	+	--
<b>OOSTHUSZEN</b>	+++	+	--	+	--
<b>MARGOLIS</b>	++	+,-	-	-	-
<b>STEFAN</b>	-	+	+	-	-
<b>NAMAVAR</b>	-	+	-	-	-
<b>TRIPATHY</b>	-	+	-	-	-
<b>PARIKH</b>		++	+	-	++



# EFFECT OF INTERVENTION

<b>AUTHOR</b>	<b>INTERVENTION</b>	<b>OUTCOME PREGNANCY RATE</b>
<b>DE VYNCK S.AFRICA</b>	<b>ATT</b>	<b>38.2%</b>
<b>TRIPATHY, INDIA</b>	<b>ATT</b>	<b>19.6%</b>
<b>STEFAN, AUSTRALIA</b>	<b>ATT</b>	<b>2.2%</b>
<b>PARIKH,INDIA</b>	<b>ATT + IVF</b>	<b>16%</b>



# Discussion

- ◆ Most of the studies are from developing countries and during nineties
- ◆ Subjects in the studies have not been selected as for socio-economic strata
- ◆ Different methods are used for diagnosis for genital TB

# CONCLUSIONS

- ◆ **Genital TB is a treatable cause of female infertility**
- ◆ **High prevalence reported in developing countries**
- ◆ **Menstrual Blood Culture has higher pick up rate in early and latent cases**
- ◆ **Treating latent cases, fertility could be restored**



# Future research agenda

- ◆ Large multicentre studies to find out the magnitude of problem
- ◆ RCT for more evidence on the most sensitive method for diagnosis of genital TB
- ◆ Look for genital TB in male partner for possibility of sexual mode of transmission?



# Acknowledgements

- ◆ **Dr. Ana Betran**
- ◆ **Dr. Francis Ndowa**
- ◆ **Tom Allen, WHO library**
- ◆ **GFMER ,WHO, IAMANEH**
- ◆ **My family**
- ◆ **Colleagues**





*Thank You*



*Taj Mahal*