

# Specific issues: fertility, contraception and pregnancy

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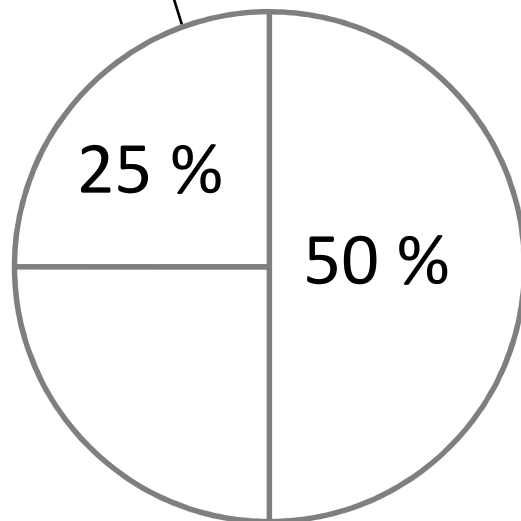
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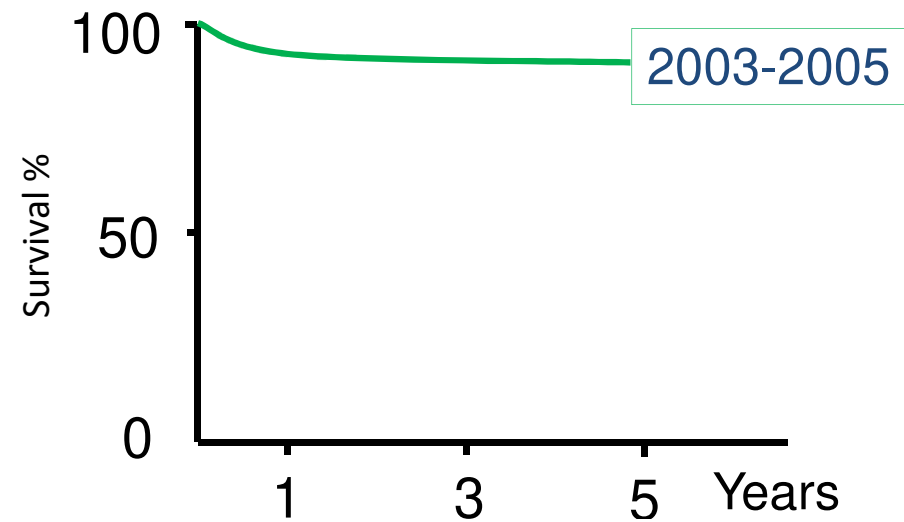
# Introduction: Portal vein thrombosis

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Childbearing age women



High life expectancy  
Good clinical condition



Darwish Murad, Ann Intern Med 2009; Plessier, Hepatology 2009

# Outline

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Fertility

Is PVT a risk factor for infertility ?

Contraception

Pregnancy

Fertility

Is PVT a risk factor for infertility?

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**No available data for PVT patients**

Shukla, Liver Int 2017; Shukla, Hepatol Int 2022

## Fertility

# Is PVT a risk factor for infertility?

### Available data: only for BCS patients

	Alteration before treatment	Alteration after treatment	Alteration in general population
<b>Women : infertility</b>	25 %	significant improvement	6 %
<b>Man</b>			
-erectile dysfunction	31 %	6 %	15-30 %
-hypogonadism	50 %	31 %	2-13 %

Same results in adjusted PVT population (age, prothrombotic conditions, others infertility factors...) ?

# Outline

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Fertility

Is PVT a risk factor for infertility ?

Contraception

Coagulation alterations and risks factors for VTE

Is contraception a risk factor for PVT ?

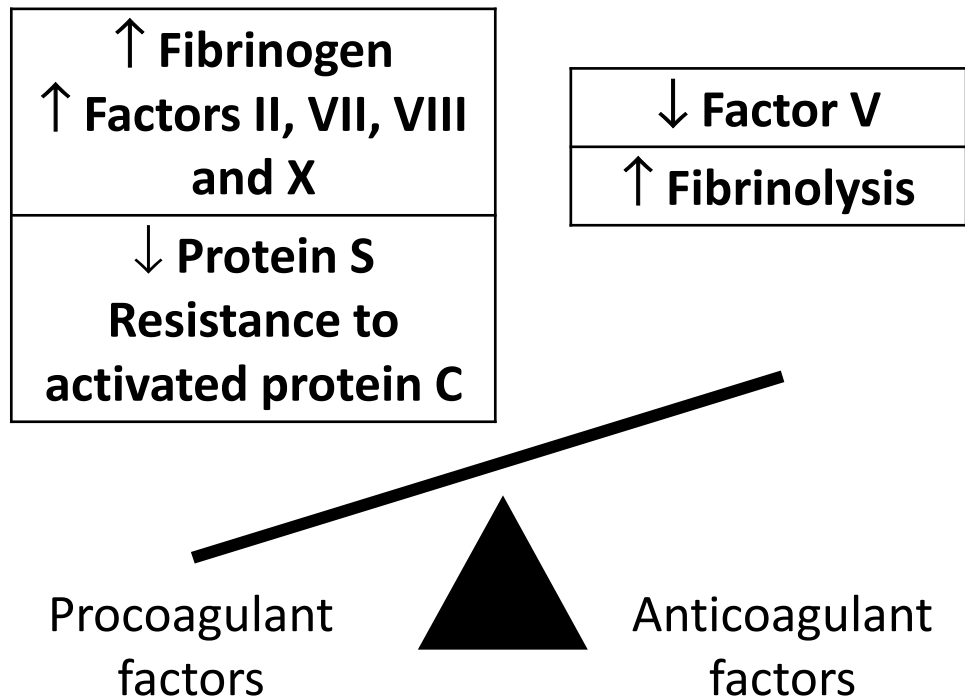
What are the best contraception modalities for PVT pts ?

Pregnancy

## Contraception

# Coagulation alterations and VTE\* risk

\* deep vein thrombosis or pulmonary embolism



	without estroPg	With estroPg
Case/100 000 years- women	5 - 10	30 -40

Battaglioli, Curr Opin Hematol 2007; Marik, NEJM 2008

## Contraception

## A risk factor for PVT ?

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- Prevalence of oral contraception:

Reference	Prevalence of oral contraception among childbearing aged women
Plessier, Hepatology 2009	44%
Wiegers, BJOG 2022	30%

- One case-control study: OR 1.5 (95% CI 0.6-3.4)

Unclear

Another precipitating factor must always be ruled out



# Contraception

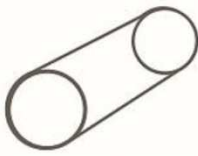
# Which modalities ?

Pearl Index\*

natural  
methods



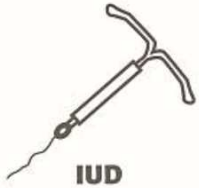
DIAPHRAGM



FEMALE CONDOM

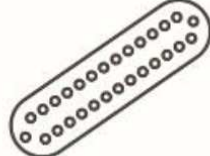


MALE CONDOM



IUD

Tubal  
occlusion

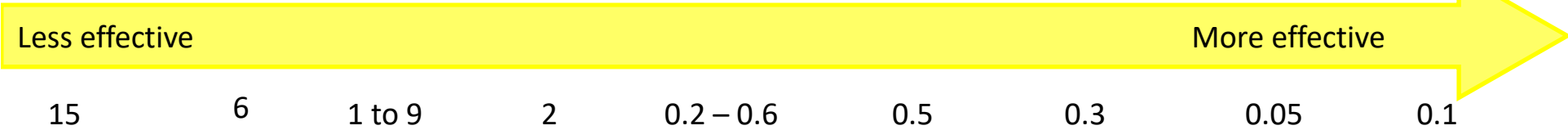


THE PILL

vasectomy



IMPLANT



\* = measures the number of pregnancies that occur for each contraceptive method if used by 100 women for one year of perfect use

# Contraception

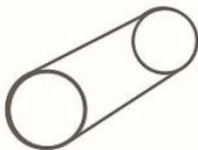
# Which modalities ?

Pearl Index\*

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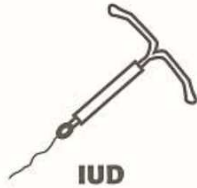
DIAPHRAGM



FEMALE CONDOM

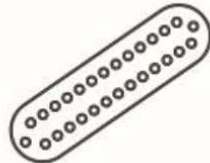


MALE CONDOM



IUD

Tubal  
occlusion



THE PILL

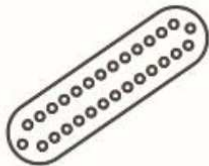
vasectomy



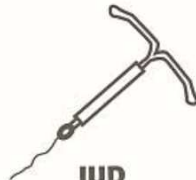
IMPLANT

Less effective

More effective



THE PILL



IUD

Tubal  
occlusion

vasectomy



IMPLANT

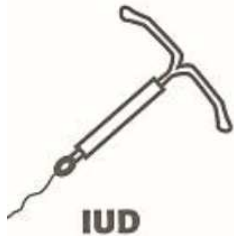
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# Contraception

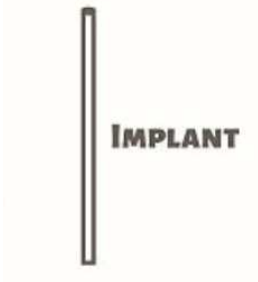
## Wich modalities for PVT women ?



(micro)progestatif:  
desogestrel  
levonorgestrel  
**Cons: compliance**

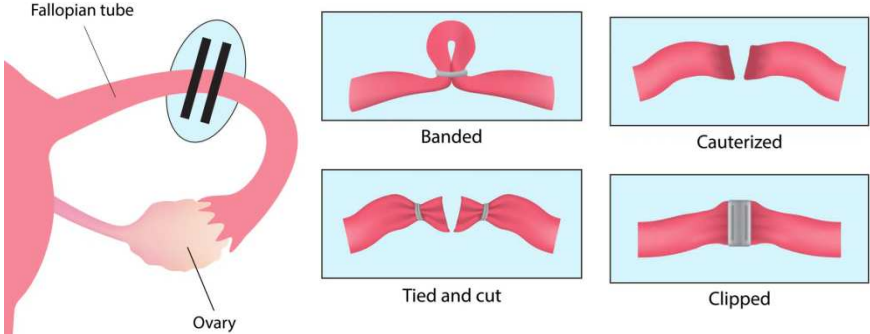


levonorgestrel  
rather than  
copper



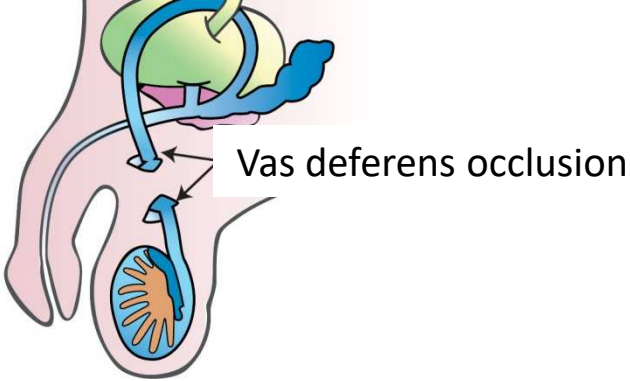
**Cons:**  
**anticoagulant**  
**thrombopenia**

### Bilateral tubal occlusion



**Cons: portal hypertension !**

### Partner surgery: vasectomy

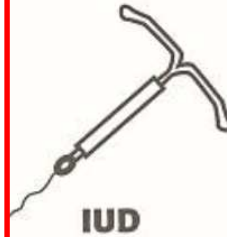


## Contraception

# Wich modalities for PVT women ?

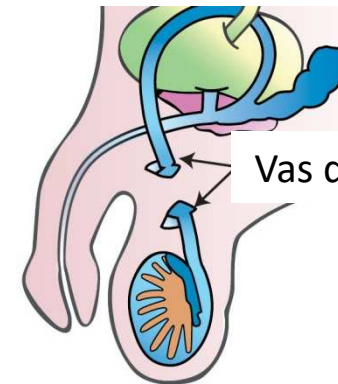


(micro)progestatif:  
desogestrel  
levonorgestrel  
**Cons: compliance**



**levonorgestrel**  
rather than  
copper

Partner surgery: vasectomy



Vas deferens occlusion

**No cons ?**

# Outline

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## Fertility

Is PVT a risk factor for infertility ?

## Contraception

Coagulation alterations and risks factors for VTE

Is contraception a risk factor for PVT ?

What are the best contraception modalities for PVT pts?

## Pregnancy

Coagulation alterations and risks factors for VTE

Is contraception a risk factor for PVT ?

What are the maternal and fetal outcomes?

Management: keys points

## Pregnancy

# Coagulation alterations and VTE\* risk

\* deep vein thrombosis or pulmonary embolism

↑ Von Willebrand factor
↑ Fibrinogen
↑ Factors II, VII, VIII and X
↓ Protein S
Resistance to activated PC
↑ Plasminogen AI-1

**Procoagulant  
factors**

	Pregnancy and post partum
RR	5
case/1000 deliveries	1

## Pregnancy

# Coagulation alterations and VTE\* risk

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**Procoagulant  
factors**

	Pregnancy and post partum
RR	5
case/1000 deliveries	1

=> Pregnancy : not consider as a risk of PVT

Battaglioli, Curr Opin Hematol 2007; Marik, NEJM 2008

## Pregnancy

## Outcomes in PVT

	Without prior diagnosis or treatment (n = 8)	Already known / treated PVT n = 33	P value
<b>Maternal outcome, n (%)</b>			
Abortion	1 (13)	1 (3)	ns
Preterm labour	5 (63)	1 (3)	< 0.001
Postpartum haemorrhage	2 (25)	1 (3)	0.019
<b>Fetal outcome, n (%)</b>			
Preterm birth	5 (71)	1 (3)	< 0.001
Low birth weight	4 (57)	0	< 0.001
Stillbirth	1 (14)	0	ns

**Pregnancy should be planned !**



## Pregnancy

## Outcomes in treated PVT

	PVT (n= 160)	General Population
<b>Maternal outcomes</b>		
Miscarriage	14%	15%
Maternal death	0%	0.01%
Variceal hemorrhage	4%	-
Thrombotic event	2%	-
Preeclampsia	<b>4%</b>	≈ 2%
<b>Fetal outcomes</b>		
Stillbirth	<b>2%</b>	≈ 0.3%
Premature birth	<b>14%</b>	≈ 7%

Hoekstra, J Hep. 2012; Mandal, Singapore Med J 2012; Aggarwal J. Obstet. G. Res.2011; Wiegers BJOG 2022

## Pregnancy

# Outcomes in treated PVT

	PVT (n= 160)	BCS (n= 59)	General Population
<u>Factors associated with poor outcomes</u>			
-Myeloproliferative neoplasms			
-Not portal hypertension at conception!			
Fetal outcome			
Stillbirth	2%	2%	≈ 0.3%
Premature birth	14%	70%	≈ 7%

Hoekstra, J Hep. 2012; Mandal, Singapore Med J 2012; Aggarwal J. Obstet. G. Res.2011; Wiegers BJOG 2022

- **Multidisciplinary team**
- **Preconception consultation : specific information**
  - Outcomes: Maternal or fetal complications
  - Management:
    - Specific exams due to PHT: endoscopy
    - Therapy : teratogenic risk of *Warfarin Fetal Syndrome*, *contraindication of hydroxyurea, propranolol and LWMH maintain* during pregnancy and in post partum (at least 6 weeks)
- **Delivery :**
  - Consider vaginal if possible
  - not systematically exclude epidural anesthesia, and there is other analgesic options

# Conclusions

- Possible higher rate of infertility than general population especially if they are not treated

- Prefer IUD with levonorgestrel, progestative oral contraception and partner's vasectomy

- Pregnancy should not be contraindicated but planned
- Informed patient: rate of miscarriages, prematurity, preeclampsia
- Before conception: PHT management, therapy adaptation
- Specific, close and multidisciplinary follow-up
- Vaginal delivery +++, not systematically exclude epidural anesthesia



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