ANTIBIOPROPHYLAXIS DURING ABORTION

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Post abortion infection after surgical abortion

- Rate : 0,01 to 22% depending on the studies

This variability is explained by the imprecision of the diagnostic criteria of PID

→ Objective criteria : fever > 38°,the rate of infection is between 0,01 to 2,44%.

→Fever PLUS pelvic pain , tenderness, pain during pelvic examination (WHO study): rate of post abortal infection :1%

Meirik O et al Lancet. 2012 May 12;379(9828):1817-24.

Post abortion infection after medical abortion

- Infection rate : 0,3 to 0,9 %
- « Toxic shock syndrome » due to Clostridium, unusual, described in USA and Canada ; no evidence for antibioprophylaxis to prevent these cases
- Danish study of 40 000 abortions : Rate of 1,7 % the same as after surgical abortion

Niinimäki O et al .Immediate complications after medical compared with surgical termination of pregnancy Obstet Gynecol. 2009 Oct;114(4):795-804.

Risk factors for post abortion infection: previous infection

- STI : Chlamydiae Trachomatis or Neisseria Gonorrhoeae
- Bacterial vaginosis

IUD insertion during surgical abortion is NOT a risk factor of infection

Chlamydia Trachomatis

- France
- Prevalence of Chlamydiae Trachomatis in general population (18 to 44 years old) : 2,5%
- In abortion centers prevalence is higher : : 6,7%[1] to 9,7 %[2] for Chlamydiae Trachomatis (0,7% for N. Gonorrhoae)
- *USA :*

→ *General population : CT is 2.5 % (14-39years old) and NG :0.3%*

→ *Abortion :* 11% for CT and 3% for NG

- Studies on antibiprophylaxis during abortion : **1,9 % to 7,7 %**

[1] Lavoué V et al Screening for Chlamydia trachomatis using self-collected vaginal swabs at a public pregnancy termination clinic in France: results of a screen-and-treat policy. Sex Transm Dis. 2012 Aug;39(8):622-7.

[2] Toyer AL et al Interest of simultaneous Chlamydia trachomatis and Neisseria gonorrhoeae screening at the time of preabortion consultation Contraception. 2012 Nov;86(5):572-6.
Datta SD et al. Gonorrhea and Chlamydia in the United States among persons 14 to 39 years of age, 1999 to 2002. Ann Intern Med 2007;147:89–96
Patel A et al. Prevalence of Chlamydia trachomatis and Neisseria gonorrhoeae genital infections in a publicly funded pregnancy termination clinic: empiric vs. indicated treatment? Contraception 2008;78:328–31

Chlamydia Trachomatis

The presence of Chlamydiae or N.Gonorrhoeae infection before the abortion increases the risk of PID

- Swedish study 1984: PID risk X 30 and endometritis x 4
- French study 1988 : PID risk X 9
- Study EMGO in Amsterdam:

- Low risk (0 to 4 %) if asymptomatic Chlamydiae infection
- High risk 12 to 20 % if symptomatic Chlamydiae infection
- Very high risk 27 à 72% if surgical abortion

Osser S, Persson K. Postabortal pelvic infection associated with Chlamydia trachomatis and the influence of humoral immunity. Am J Obstet Gynecol 1984;150:699–703

Levallois P, Rioux JE. Prophylactic antibiotics for suction curettage abortion: results of a clinical controlled trial. Am J Obstet Gynecol 1988;158:100–5

Boecke AJ, Van Bergen JE, Morre SA, Van Everdingen JJ.The risk of pelvic inflammatory disease associated with urogenital infection with Chlamydia trachomatis; literature review. *Ned Tijdschr Geneeskd,* 2005; 149: 850-2.

Chlamydia Trachomatis

2 studies on the effect of antibioprophylaxis in surgical abortion : stratified by presence of CT infection before the abortion

→ In case of CT infection, reduction of PID incidence in post-abortum if antibioprophylaxis targeted on CT (doxycycline ou érythromycin) was given

→ RR = 0,14 95 %CI = 0,03-0,57

Low N, Mueller M, Van Vliet HA, Kapp N. Perioperative antibiotics to prevent infection after first-trimester abortion.Cochrane Database Syst Rev. 2012 Mar 14;3

Bacterial Vaginosis

- Presence of bacterial vaginosis is a risk factor of PID
- In antibioprophylaxis studies , rate of detection of bacterial vaginosis before first trimester surgical abortion: 17 % to 36 %
- Few studies formally incriminate bacterial vaginosis as a risk factor of PID after surgical abortion

→ 4 randomised studies evaluated the efficacy of antibioproprophylaxis against bacterial vaginosis : Only one study shows a reduction of the risk of PID

Low N, Mueller M, Van Vliet HA, Kapp N. Perioperative antibiotics to prevent infection after first-trimester abortion.Cochrane Database Syst Rev. 2012 Mar 14;3

Three strategies to reduce the risk of PID after surgical abortion :

- Universal antibioprophylaxis
- « *Screen and treat* » stategy
- « *Belt and brace* » strategy

Efficacy of antibioprophylaxis

- Méta-analysis by Sawaya 1996:

→ 42% reduction of risk of PID

- Cochrane study 2012

→ 41% réduction of risk of PID

→ Just one « real » study on universal Abprophylaxis (without any screening) : 67 % reduction risk

- Two classes of antibiotics have been shown to be effective: imidazoles and tetracyclines
- **All protocols were shown to be effective**

Sawaya GF, Grady D, Kerlikowske K, et al. Antibiotics at the time of induced abortion: the case for universal prophylaxis based on a metaanalysis. Obstet Gynecol 1996;87:884–90

Low N, Mueller M, Van Vliet HA, Kapp N. Perioperative antibiotics to prevent infection after first-trimester abortion.Cochrane Database Syst Rev. 2012 Mar 14;3

Darj E, Stralin EB, Nilsson S. The prophylactic effect of doxycycline onpostoperative infection rate after first-trimester abortion. Obstet Gynecol 1987;70:755-8.

International Recommendations

- **WHO 2012 : Every women must benefit of an antibioprophyaxis during surgical abortion**
- **USA**: Doxycycline 100mg before abortion and 200 mg after orally or Métronidazole 500 mgx2/j during 5 days
- **Canada**: Doxycycline 100mg before abortion and 200mg after

Safe Abortion: Technical and Policy Guidance for Health Systems.2nd edition. Geneva: World Health Organization; 2012
Committee on Practice ACOG Bulletins Gynecology. ACOG practice bulletin n° 104:antibiotic prophylaxis for gynaecologic procedures. Obstet Gynecol 113:1180-9.
Van Eyk N, van Schalkwyk J; Infectious Diseases Committee. Antibiotic prophylaxis in gynaecologic procedures. J Obstet Gynaecol Can. 2012 Apr;34(4):382-91

French recomendations (2011)

- < 25 or at risk of STI

→ **Doxycycline** 100mg orally before abortion and 200mg after *or Azythromycin 1g orally in case of intolerance to Doxy*

- > 25

→ **Métronidazole** 500mg orally during the abortion and 500mg orally 4h and 8 h after

Shojai R, Ohannessian A, Maruani J, Agostini A. Prophylactic antibiotics and intrauterine procedures J Gynecol Obstet Biol Reprod (Paris). 2012 Dec;41(8):913-21

Universal antibioprophylaxis

- Required for centres where screening of STI is not routine (private clinics, some public centers …)
- In public centres in France : screening of STI is also a mission

« screen and treat » strategy *(Sweden)*

- STI and bacterial vaginosis screening for every women undergoing a surgical abortion
- As soon as the result is known (before the abortion + +) , treatment of positive cases
- One study comparing ATBprophylaxis to screen and treat strategy
- → Incidence of PID greater with « screen and treat » strategy (RR = 1,53 ; 95 % CI = **0,99** -2,36)

Penney GC, Thomson M, Norman J, McKenzie H, Vale L, Smith R, et al.A randomised comparison of strategies for reducing infective complications of induced abortion. *British Journal of Obstetrics and Gynaecology* 1998;105: 592–8.

Avantages

- **Partner notification and treatment** (risk of re infection)
- Counselling STI
- Avoid administration of antibiotics

Disadvantages

- **Cost**
- **Perfect organisation** getting the results , contacting women to give treatment …
- Which pathogens ?

« Belt and brace » strategy

- Reduce the risk of PID in post abortum AND testing women for STI
- → ANAES 2004 : Screen Chlamydiae Trachomatis in women under 25 years consulting in Family planning services, abortions centres or IST centres
- → HAS 2010 : Screen N.Gonorrhoae in men and women consulting in Family planning services, abortions centers or IST centers

- < 25 (screen and treat Chlamydiae trachomatis)

→ **Métronidazole** 500mg orally during abortion an 500mg orally 4h and 8 h after

- > 25 (Bacterial vaginosis screening ?)

→**Doxycycline** 100mg orally 1h before abortion and 200mg after *or Azythromycin 1g orally + Metronidazole ?*

NB : Screen N.Gonocorrhoae : systematic or depending of the prevalence in particular populations ?

RCOG Recommendations

- Antibioprophylaxis and screening of Chlamydiae Trachomatis are recommended in surgical and medical abortion
- Metronidazole for all women :800mg orally before or during abortion 1 g rectally)
- In case of positive CT screening test :

→ Azithromycin 1g orally the day of abortion or Doxycycline 100mg orally twice a day for 7 days after the abortion

Antibioprophylaxis in medical abortion

- No randomised study
- Retrospective study in USA : reduction of severe genital infections after medical abortion (-76%) result of 2 interventions :

→ Changing route of administration of misoprostol

→ Doxycycline 100 mg during 7 day after mifepristone

- Risk reduction : 0,019 %
- → Treat 5 000 women to avoid 1 case of severe infection

Fjerstad M, Trussell J, Sivin I, et al. Rates of serious infection after changes in regimens for medical abortion. N Engl J Med 2009;361:145–51

ADHERENCE

	N=278 (%)
Any pills taken	97.5
Missed any doses	44.2
- Missed >1 dose	29.1
- Missed 2 consecutive doses	9.7
More than 1 pill remaining at follow up	35.3
Extension of regimen (>8 days)	9.3
Early termination of regimen (<7 days)	34.3
Perfect Adherence*	28.3

*Perfect adherence defined as not missing any doses, had 0 or 1 pill left, took pills for 7 or 8 days

Conclusion 1

- The risk of infection in post- abortion period is very low (1%)
- Demonstration of antibioprophylaxis efficacy in surgical abortion , not in medical abortion
- The magnitude of efficacy depends on the prevalence of STI in the population

Conclusion 2

- The integration of STI screening in universal antibioprophylaxis strategy must be evaluated concerning cost and efficacy .
- Comparative studies are missing to know what is the best protocol of antibioprophylaxis
- We need better criteria to diagnose the presence of pelvic inflammatory disease