

Can Candida be fearsome in pregnancy?

Prof Dr Ljubomir Petricevic



Department of Obstetrics and Gynaecology
Vienna , Austria

Disclosure

Associate Professor PD MD Ljubomir Petricevic

- **HSO Health Care GmbH, A-1010 Wien**

- **Institut Allergosan, A-8042 Graz**
- **Pharmazeutische Fabrik Montavit GmbH, A-6067 Absam**
- **Montavit -Reprezentanta RO,011843 Bucharest**
- **Pfizer Limited , UK**
- **Pfizer LLC, RUS 123112 Moscow**
- **Dr. August WOLFF GmbH & Co. KG Arzneimittel, D-33611 Bielefeld**
- **Mithra Pharmaceuticals GmbH, D-52076 Aachen**
- **FERRING Arzneimittel GmbH, A-1100 Wien**
- **Germania Pharmazeutika GmbH, A-1150 Wien**
- **SODIMED Serbia, SER-11000 Belgrade**

YES

Thank you for your attention

Abnormal vaginal microbiota in pregnancy

- ◆ The presence of an abnormal vaginal microbiota in early pregnancy is a recognized risk factor for preterm delivery (PTD) and low birth weight.

- ◆ Gravett, M. G. (1986)
- ◆ Krohn, M. A (1991).
- ◆ Hay, P. E. (1994).
- ◆ McGregor, J. A. (1994).
- ◆ Goldenberg, R. (2000).
- ◆ Donders, G. (2009).



- ◆ BV , aerobic vaginitis, absence of lactobacilli
- ◆ Candida Infection?

Candida in pregnancy

- ◆ *Candida spp* colonisation in non pregnant women 20%

- ◆ *C. albicans* 90%

- ◆ *C. glabrata* 7%



- ◆ Due to hormonal changes in pregnancy vaginal colonization, with *Candida spp* increased.

Sobel JD. 2007

- ◆ Prevalence up to 30% in pregnancy

- ◆ Mendling W. 2007

Candida in pregnancy

- ◆ Symptomatic infection caused by *Candida* spp. pregnant (more) vs. non pregnant women
 - ◆ Mendling W. 2012, Galask RP 1988
- ◆ Asymptomatic *Candida* colonisation Higher prevalence only in pregnancy
 - ◆ Akerele J. 2002, de Oliveira JM. 1993, Leli C 2013
- ◆ Symptomatic 25% vs. Asymptomatic 22,9%
 - ◆ Leli C. 2013

Candida in pregnancy

- ◆ Contradictory data about the role of vaginal candidiasis in the mechanisms of PTD.
- ◆ Sobel JD. 2007

Pro and Contra

Candida in pregnancy

Contra

- ◆ Candida colonisation not associated with LBW or PTD
A multicenter cohort of 13,914 women, prevalence of moderate to heavy Candida colonization at midgestation was 10%.
- ◆ Cotch MF. 1998
- ◆ There is no evidence that thrush in pregnancy is harmful to the baby
- ◆ Young GL 2001 Review

Candida in pregnancy

Pro

- ◆ Candidiasis during pregnancy, increased risk of PROM, PTD
38151 Patients, 20% Candida prevalence

Czeizel. 2004

- ◆ Asymptomatic Candida in early pregnancy Spontaneous preterm birth (<37 weeks of gestation)

61 (3.0) 112 (5.3) 2.4 (1.2 to 3.6) 0.0001

Kiss. 2004

- ◆ Candida colonisation in women at <20 weeks gestation

Roberts CL 2011

Candida in pregnancy

Pro

- ◆ Recurrent asymptomatic vaginal colonization with *Candida* in early pregnancy is associated with preterm delivery and low birth weight.

AOGS

ACTA Obstetrica et Gynecologica



Scandinavica

Effect of asymptomatic vaginal colonization with *Candida albicans* on pregnancy outcome

ALEX FARR¹, HERBERT KISS¹, IRIS HOLZER¹, PETER HUSSLEIN¹, MICHAEL HAGMANN² & LJUBOMIR PETRICEVIC¹

Variable	Category	Non-exposed: normal/ intermediate flora (n = 6708)			Exposed: <i>Candida</i> only (n = 1142)			Exposed: recurrent <i>Candida</i> only ² (n = 185)		
		%	n	95% CI	%	n	95% CI	%	n	95% CI
Gestational week at delivery	<23+0 weeks	0.6	43	0-1.32	0.7	8	0-2.53	0	0	0-5.19
	23+0 to 27+6 weeks	0.8	53	0.13-1.47	1.3	14	0-2.87	3.3	6	0-7.83
	28+0 to 31+6 weeks	1.0	64	0.30-1.63	1.3	15	0-3.33	1.6	3	0-7.17

Candida in pregnancy

Pro

- ◆ Symptomatic vaginal infection with *Candida* in mid pregnancy is associated with preterm delivery and lower birth weight.

The colonization with *Candida* species is more harmful in the second trimester of pregnancy

Iris Holzer¹ · Alex Farr¹ · Herbert Kiss¹ · Michael Hagmann² · Ljubomir Petricevic¹



Variable	Category Unit	Study group		All	Test
		Trimenon 1	Trimenon 2		
		Mean ± SD N (%)	Mean ± SD N (%)		
Prematurity	Preterm delivery	64 (10)	71 (18)	135 (13)	0.0002
	No preterm delivery	609 (90)	322 (82)	931 (87)	
Birthweight	Grams	3234 ± 600	2989 ± 809	3144 ± 694	< 0,0001

Candida in pregnancy

Reduction of PTD with Therapy

- ◆ Vaginal clotrimazole treatment of candidiasis during pregnancy was associated with a significantly higher mean gestational age, resulting in a 34-64% reduction in the prevalence of preterm birth

Czeizel. 2004

- ◆ Therapy of asymptomatic Candida in early pregnancy reduces PTD Rates.

Kiss. 2004

Candida in pregnancy

Reduction of PTD with Therapy

- ◆ Treatment with clotrimazole. Higher spontaneous PTD rate in women with untreated asymptomatic Candidiasis.

6,25% vs. 2,99%

Roberts CL 2011

- ◆ Significant reduction in spontaneous preterm births in treated compared with untreated women (meta-analysis RR=0,36 95% CI 0,17 to 0,75)

- ◆ Roberts CL 2015 Review

Candida in pregnancy

How to Treat

- ◆ First line topical treatment with imidazoles for 7 days

Young GL 2001 Review

- ◆ Azoles not recommended by FDA but effective

- ◆ Single low dose of Fluconazole not associated with birth defect but incidence of Fallot tetralogy.

- ◆ Mogald-Nielsen D 2013

Candida in pregnancy

How to Treat

- ◆ Vaginal administration is an effective alternative to oral administration, especially in First trimester.

Sobel J 2015

Candida Glabrata ?

Candida in pregnancy

When to Treat

- ◆ Screen and treat first trimester asymptomatic candidiasis. PTD reduction.
- ◆ Treat symptomatic candida infection.
- ◆ Third trimester of pregnancy screen and treat reduces newborn oral thrush and diaper dermatitis from 10% to 2%

Mendling W 2012

**Can Candida be
fearsome in
pregnancy?**

yes

ISIDOG

INTERNATIONAL SOCIETY
FOR INFECTIOUS DISEASES IN
OBSTETRICS AND GYNAECOLOGY



WELCOME TO



02nd ISIDOG CONGRESS

VIENNA, AUSTRIA, 26th – 29th OCT. 2017



IN COOPERATION WITH

OEGGG

AUSTRIAN SOCIETY OF
GYNAECOLOGY AND OBSTETRICS



Prof. Dr. Ljubomir Petricevic
Conference President



Prof. Dr. Herbert Kiss
President ESIDOG Austria



Prof. Dr. Gilbert Donders
President ISIDOG