VAGINOSE ET GROSSESSE

Dr Anna Ramos
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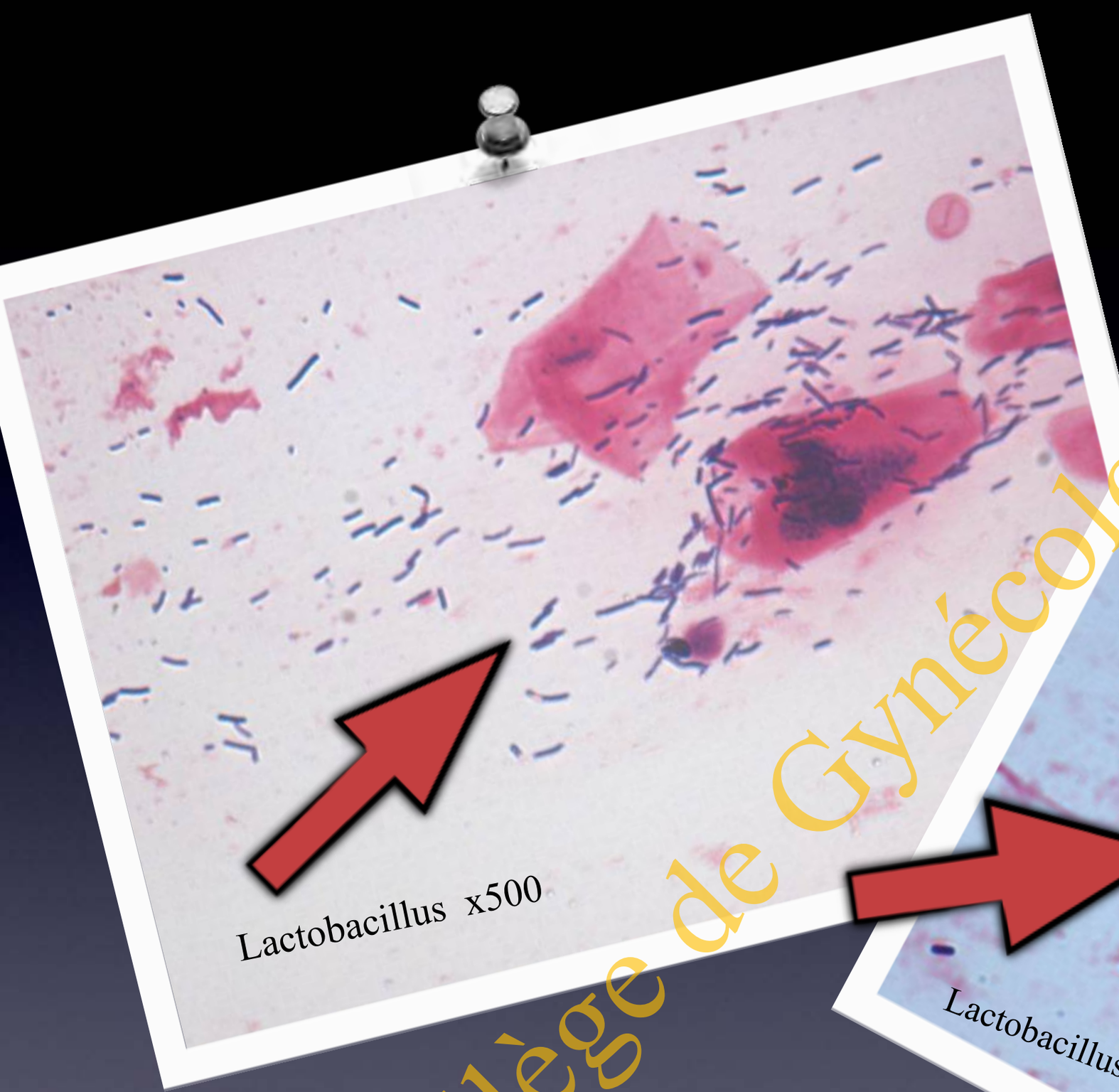
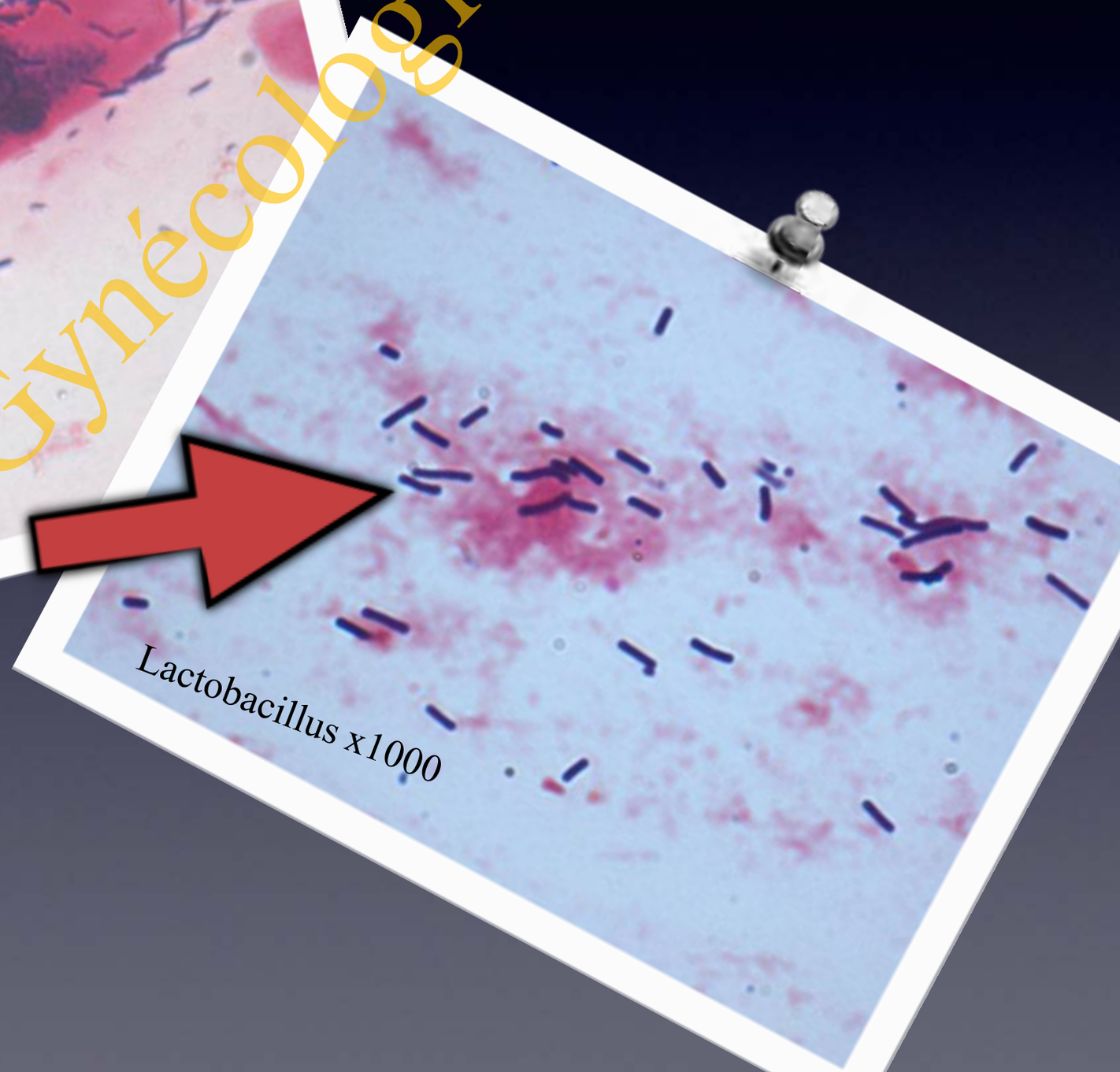
Vendredi 27 Septembre 2013

Flore vaginale normale

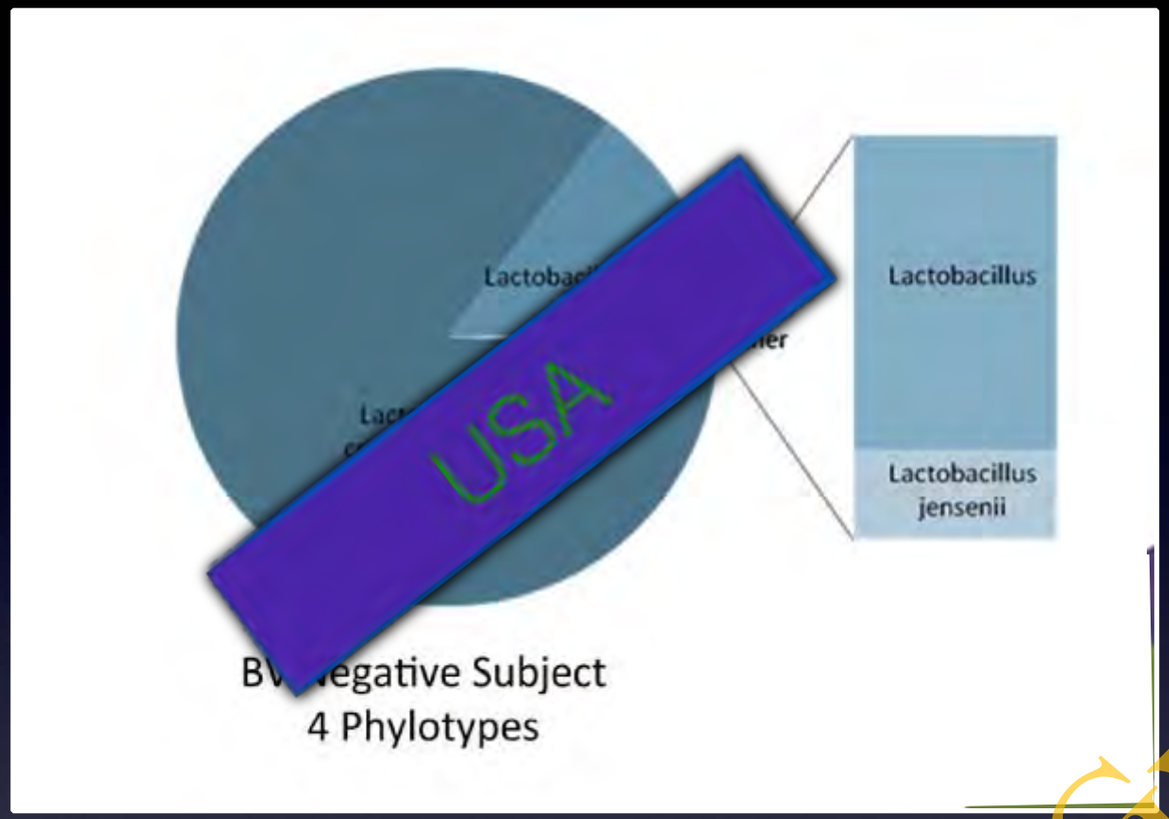


Lactobacillus x500



Lactobacillus x1000

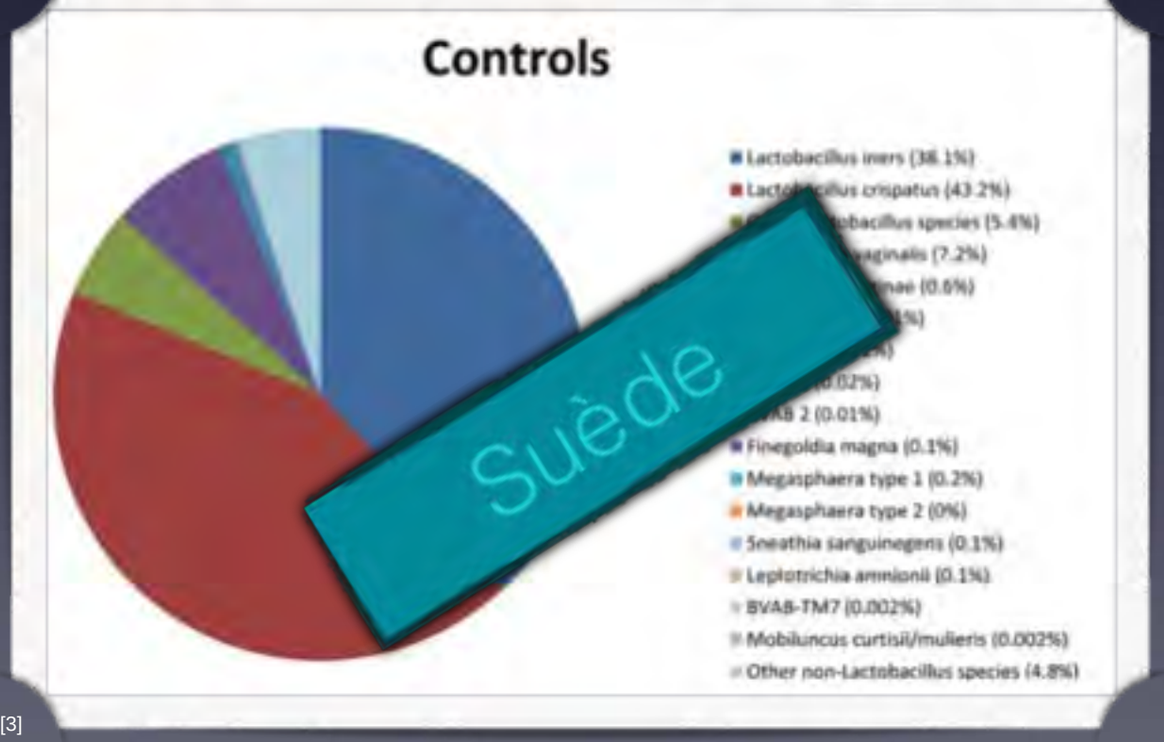
Lactobacillus



Peny harkar S & Al. Identification and characterisation of vaginal lactobacilli from South African women. BMC Infect Dis. 2013 Jan 26;13:43.

Biologie moléculaire

Colonisation par 1 ou 2 espèces de Lactobacillus



Lamont R & Al. The vaginal microbiome: new information about genital tract flora using molecular based techniques. BJOG 2011;118:533–549. [3]

Shipitsyna E et al. Composition of the Vaginal Microbiota in Women of Reproductive Age – Sensitive and Specific Molecular Diagnosis of Bacterial Vaginosis Is Possible? PLoS ONE 2013 ; 8(4): e60670.

Mécanismes des lactobacillus

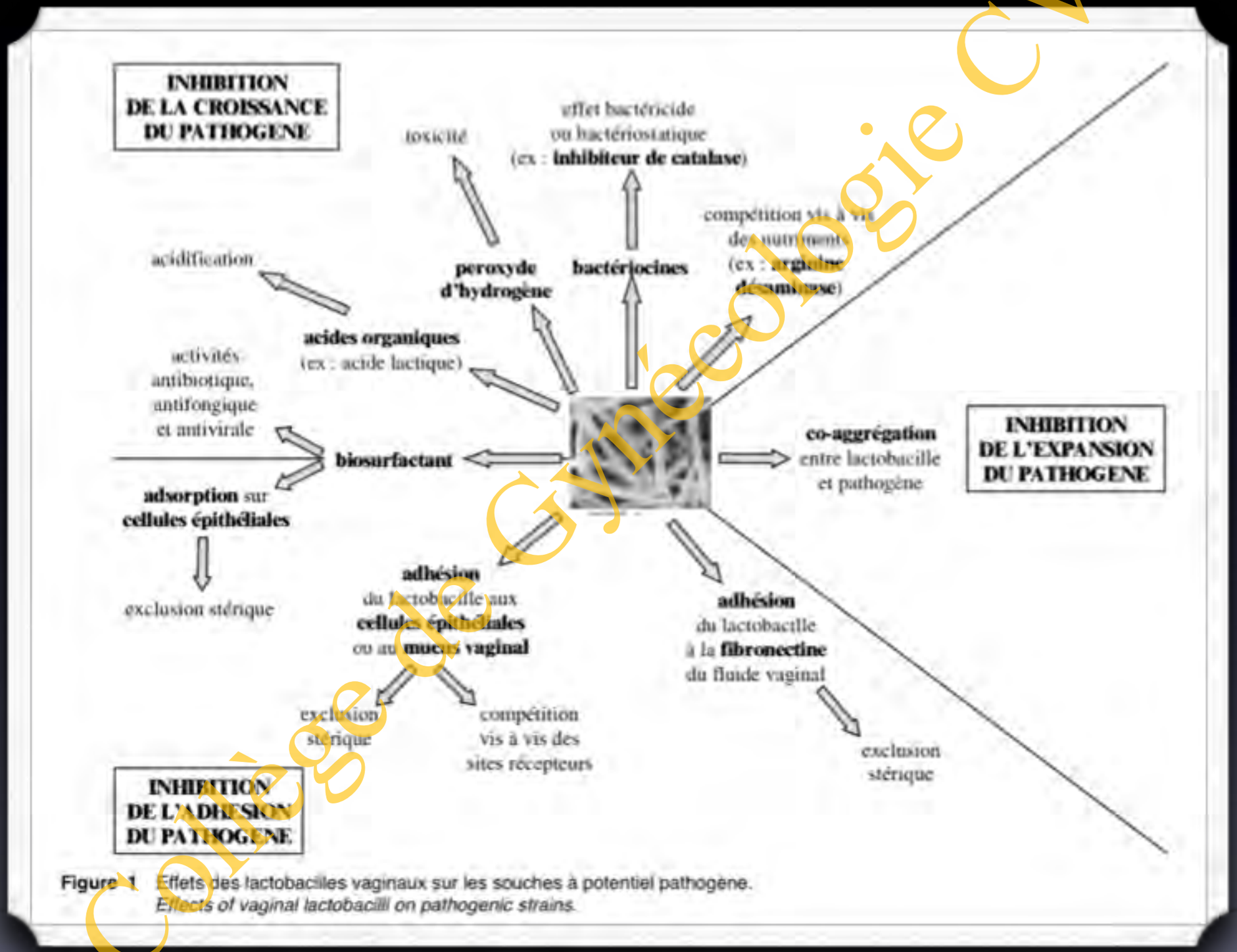
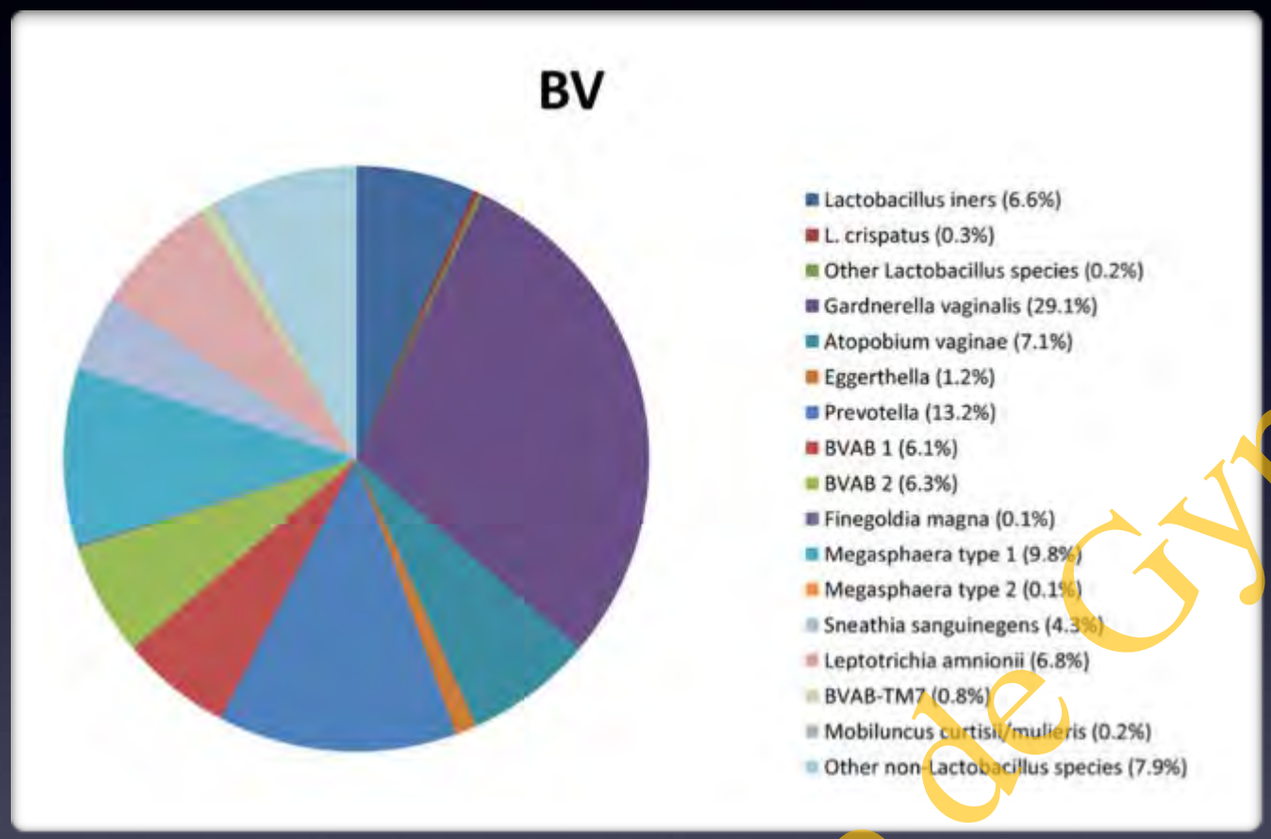


Figure 1 Effets des lactobacilles vaginaux sur les souches à potentiel pathogène.
Effects of vaginal lactobacilli on pathogenic strains.

J.-P. Lepargneur, V. Rousseau.Rôle protecteur de la flore de Doderleïn. J Gynecol Obstet Biol Reprod 2002 ; 31 : 485-494.

Vaginose bactérienne

Déséquilibre de la flore vaginale



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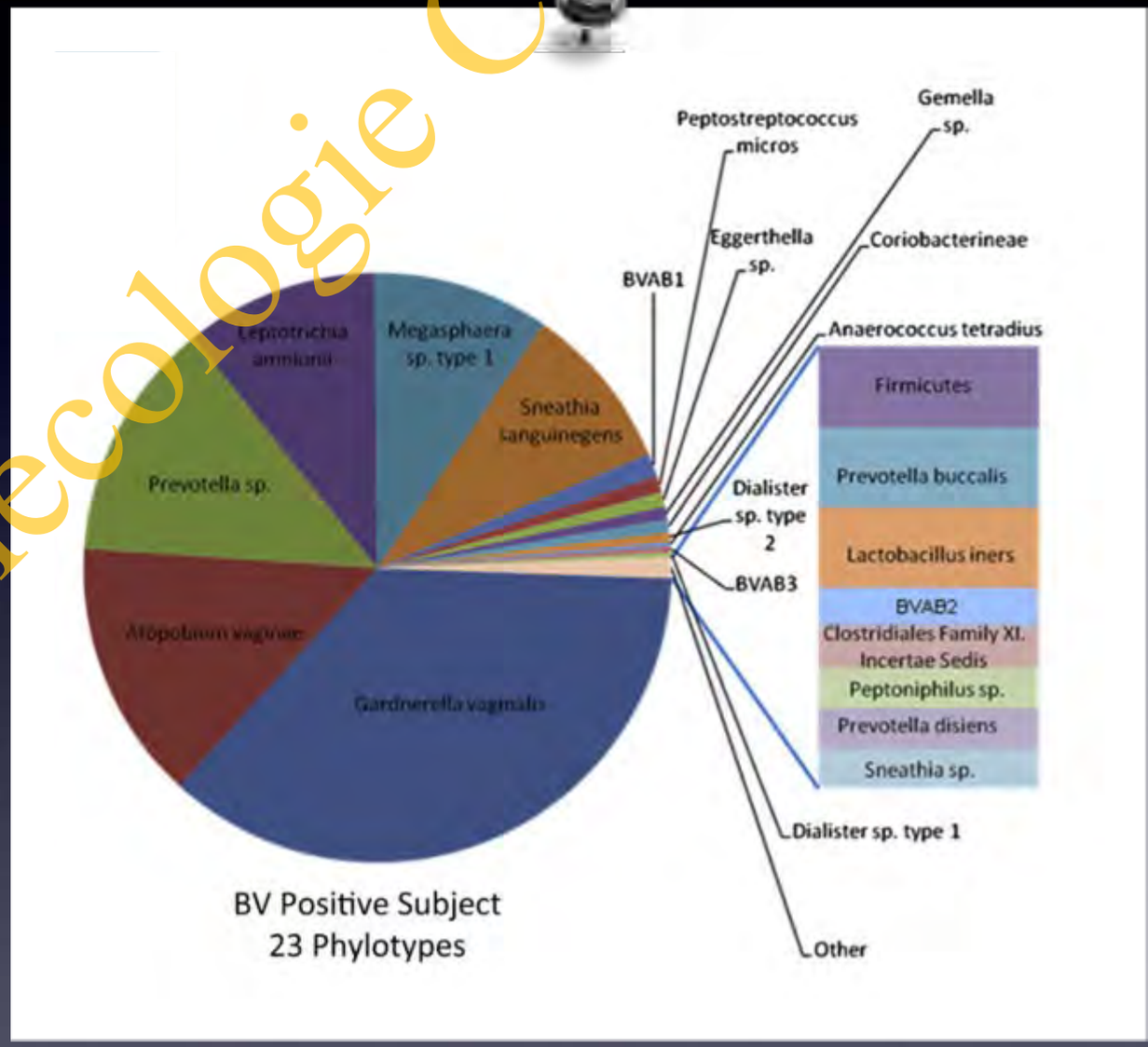
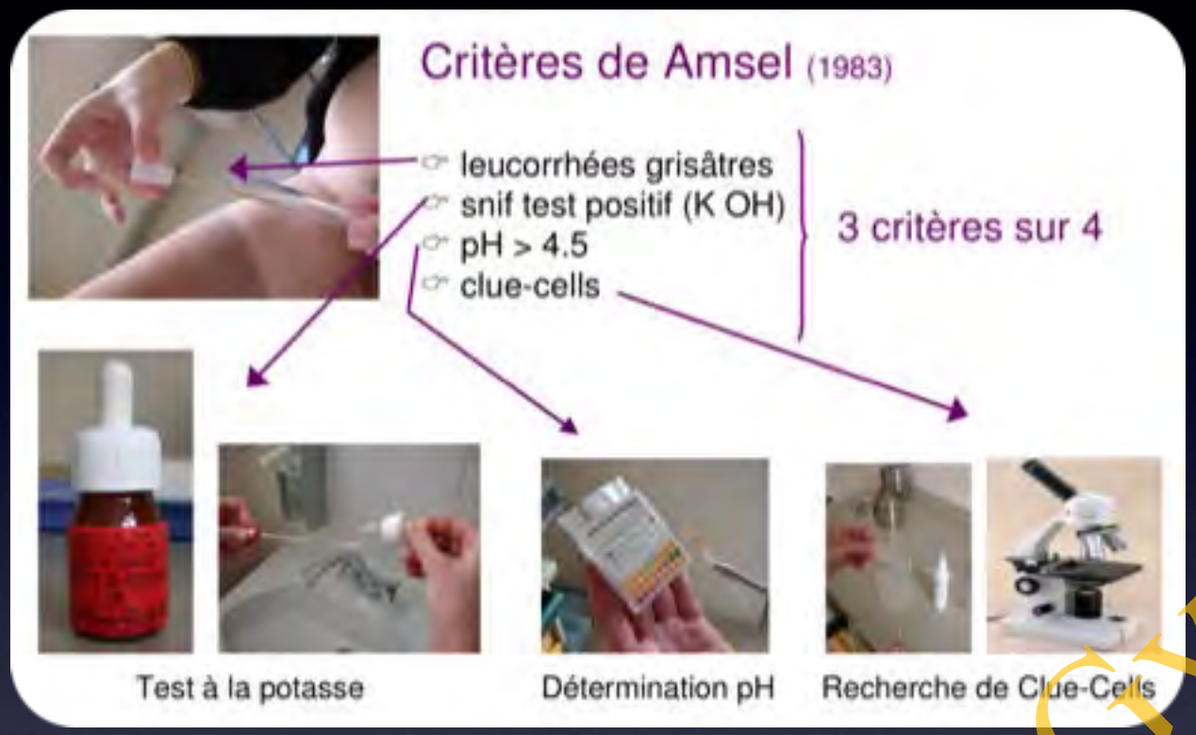


Lamont R & Al. The vaginal microbiome: new information about genital tract flora using molecular based techniques. BJOG 2011;118:533–549. [3]

Méthodes diagnostiques

Critères d'Amsel



Dr Frédérique Canis, Pr. Damien Subtil. CHRU Lille

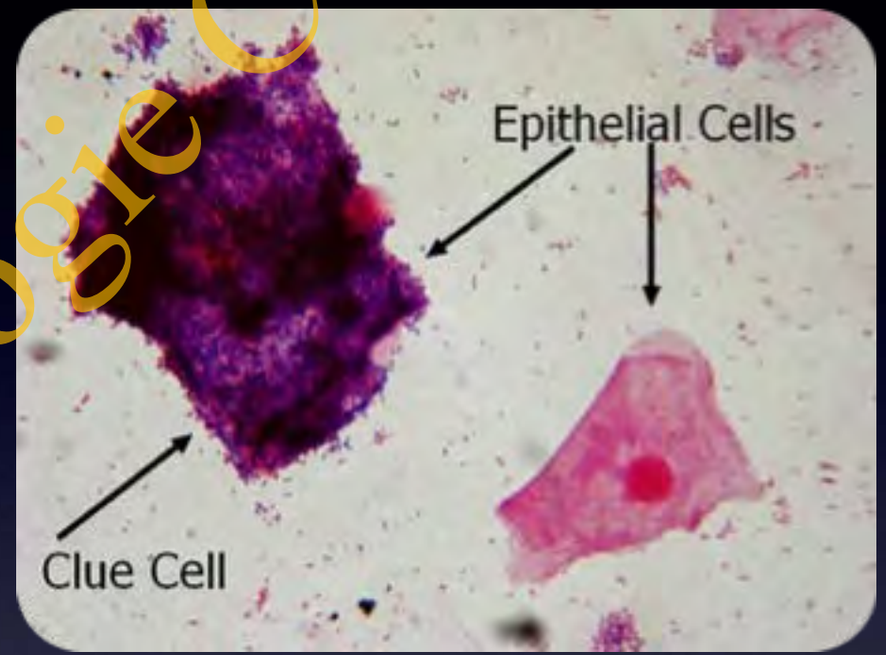


Table 1 Bacterial vaginosis diagnosed in 135 women according to Amsel's clinical criteria, evaluating each criterion individually

Criterion	*n*	%	*S (%) (95% CI)	**Sp (%) (95% CI)	***PPV (%)	****NPV (%)
Vaginal pH ≥4.5	51	38	97 (90–100)	79 (71–87)	57	99
Positive whiff test	41	30	83 (70–97)	85 (78–92)	61	94
Presence of *clue cells*	43	32	93 (84–100)	86 (79–92)	65	98
Presence of vaginal discharge	107	79	97 (90–100)	26 (17–34)	27	96

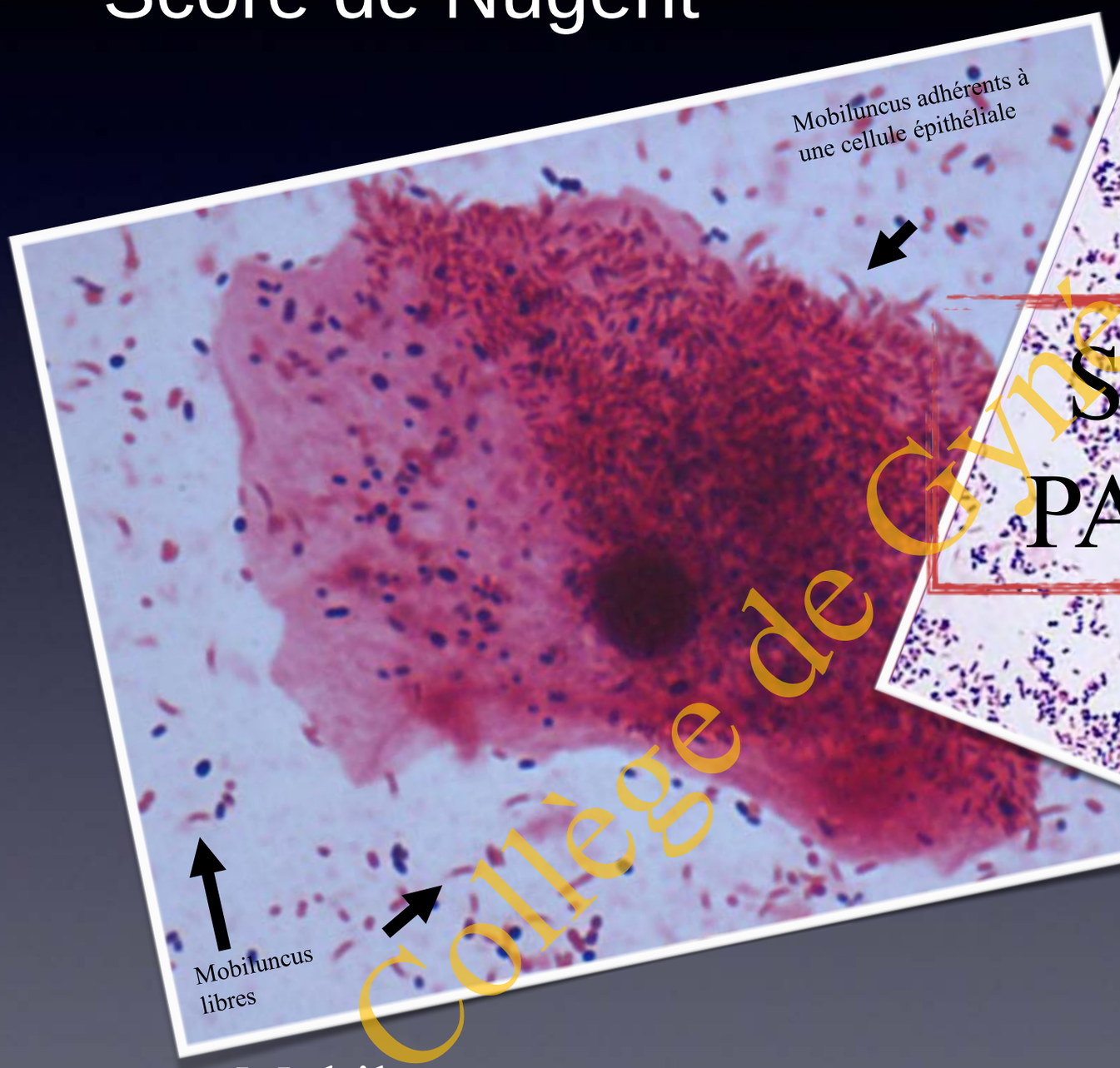
J.A. Simoes et Al. Clinical diagnosis of bacterial vaginosis. nternational Journal of Gynecology and Obstetrics (2006) 94, 28 — 32nternational Journal of Gynecology and Obstetrics (2006) 94, 28 — 32

Table 2 Bacterial vaginosis diagnosed in 135 women according to Amsel's clinical criteria, using the classic method (at least three of the four criteria present) and in combinations of only two criteria

Criteria	*n*	%	*S (%) (95% CI)	**Sp (%) (95% CI)	***PPV (%)	****NPV (%)
Amsel's classic criteria (presence of 3 criteria)	39	29	97 (90–100)	90 (85–96)	74	99
Vaginal pH ≥4.5+positive whiff test	33	24	83 (70–97)	92 (87–97)	76	95
Vaginal pH ≥4.5+presence of vaginal discharge	47	35	93 (84–100)	82 (74–89)	60	98
Vaginal pH ≥4.5+clue cells	33	24	90 (79–100)	94 (90–99)	82	97
Positive whiff test+clue cells	29	21	89 (77–100)	94 (99–99)	80	97
Positive whiff test+presence of vaginal discharge	38	28	83 (70–97)	87 (81–94)	66	95
Presence of vaginal discharge+clue cells	35	26	90 (79–100)	92 (87–97)	77	97

Méthodes diagnostiques

Score de Nugent



Mobiluncus

Gardnerella Vaginalis

Méthodes diagnostiques

Score de Nugent

Calcul du score de Nugent (objectif à immersion à huile 1000 X).

Sous-score	*Lactobacillus* spp	*Gardnerella vaginalis*	*Mobiluncus* spp
	Nombre de gros bacille Gram positif par champ	Nombre de petit bacille Gram négatif ou Gram variable par champ	Nombre de bacille Gram négatif incurvé par champ
0	> 30	0	0
1	5–30	< 1	1–5
2	1–4	1–4	> 5
3	< 1	5–30	
4	0	> 30	

Étape 1 : attribuer un sous-score en fonction de la quantification de trois morphotypes bactériens.
Étape 2 : classer la flore étudiée selon la valeur du score de Nugent définie par l'addition des trois sous-scores précédents ; score inférieur ou égale à 3 : flore normale ; score entre 4 et 6 : flore intermédiaire ; score supérieur ou égale à 7 : vaginose bactérienne.

J.-P. Menard & Al. Vaginose bactérienne et accouchement prématuré. Gynécologie Obstétrique & Fertilité 40 (2012) 48–54

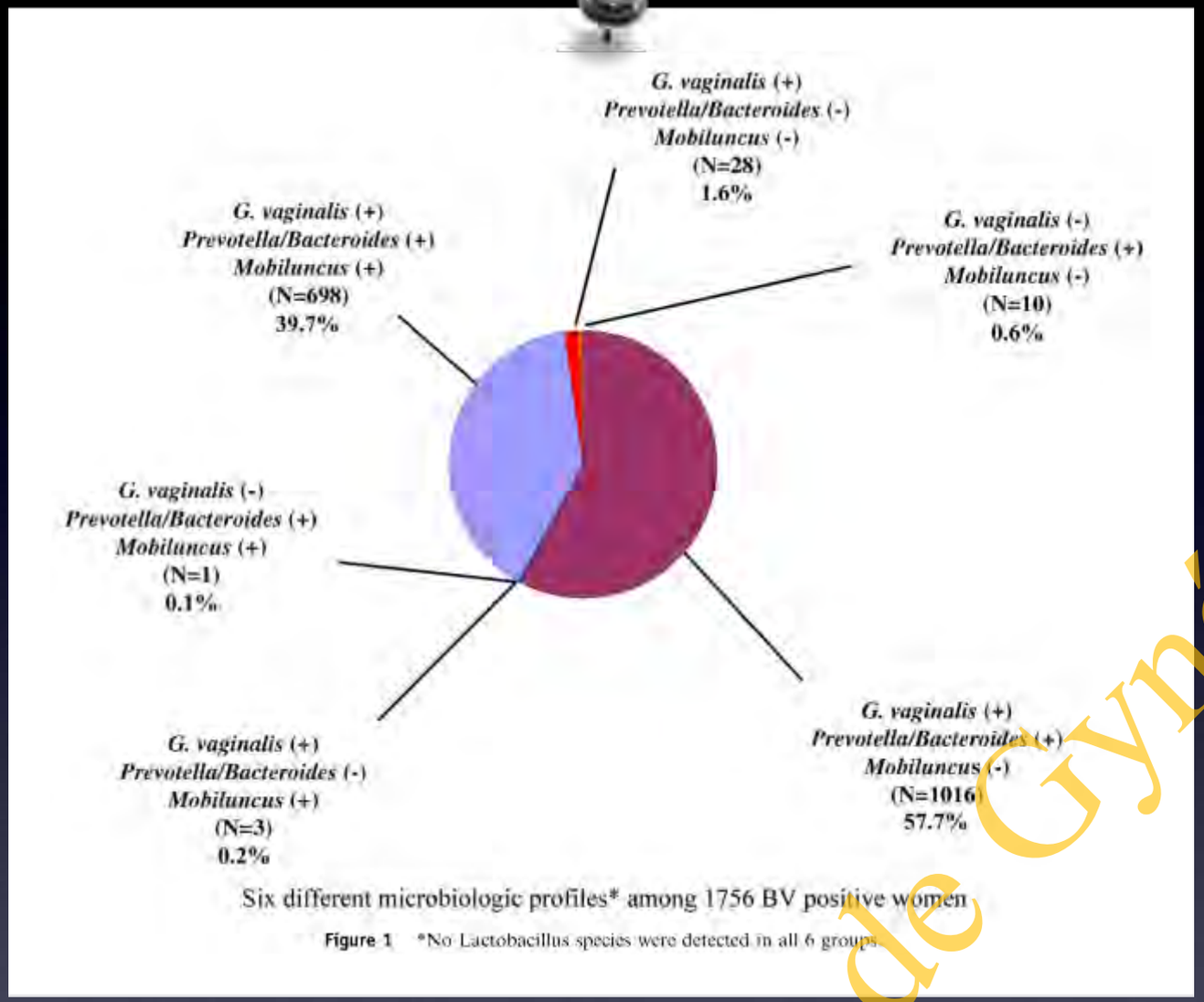
Table 3
Correlation coefficient, percentage of agreement, and κ statistics for the interpretation of Gram-stained vaginal smears by using Nugent's criteria for the diagnosis of BV among the three centers (N = 301)

Comparison of centers	Correlation coefficient[1]	% Agreement[2]	κ	Difference in the frequency of BV[3]
Center 1 vs. 2	0.75	81.1	0.63	13.8^{α}
Center 2 vs. 3	0.76	79.5	0.60	18.1^{α}
Center 1 vs. 3	0.84	86.9	0.72	3.8^{β}

Évaluation semi-quantitative de 3 morphotypes bactériens:
Lactobacillus
Gardnerella Vaginalis
Mobiluncus

Pinar Zarakolua et Al. Reliability of interpretation of gram-stained vaginal smears by Nugent's scoring System for diagnosis of bacterial vaginosis. Diagnostic Microbiology and Infectious Disease www.elsevier.com/locate/diagmicrobio 48 (2004) 77–80

Vaginose bactérienne



Six different microbiologic profiles* among 1756 BV positive women

Figure 1 *No Lactobacillus species were detected in all 6 groups.

Leonardo Pereira et al.Variation in microbiologic profiles among pregnant women with bacterial vaginosis.American Journal of Obstetrics and Gynecology (2005) 193, 746–51

La présence de Mobiluncus est plus souvent associée à la présence de "Clue celles" (OR= 1.7) et d'odeur de poisson (OR=1,5)

The organisms classically associated with bacterial vaginosis using culture are shown in the first column and those more recently identified through molecular techniques in the second

Gardnerella vaginalis	*Atopobium vaginae*
Bacteroides (Prevotella)	BVAB1-3 (*Clostridiales*)
Mycoplasma hominis	*Megasphaera*
Mobiluncus spp.	*Sneathia*
	Leptotrichia

Hay P. Bacterial vaginosis. Medicine, Volume 33, Issue 10, 1 October 2005, Pages 58-61

Différentes appellations au cours du temps

Prévalence de la Vaginose bactérienne

Bacterial vaginosis prevalence estimates by region, country, and year of study *(continued)*

Location	Study location, date	Study type,* selection process, and sample size	Median or mean age (±SE; range), y	Diagnostic process	BV prevalence, %
Ireland	Dublin, 1999 through 2001[79]	203 women, 18-35 wks pregnant presenting for routine ANC were randomly selected; part of International Infections in Pregnancy study; all slides were analyzed at 1 central laboratory by experienced team; EC: ABs in preceding 2 wks, symptoms of vaginitis	28 (16–44)	NSS	5.9
Pologne	Lodz, 2001[103]	A group of 196 pregnant women at 8-16 wks' gestation were selected randomly from patients of 10 district maternity units in Lodz region; EC: nonsingleton pregnancies	NS	Spiegel criteria	28.5

Europe

En France :
7,1% des femmes enceintes avant 14 SA

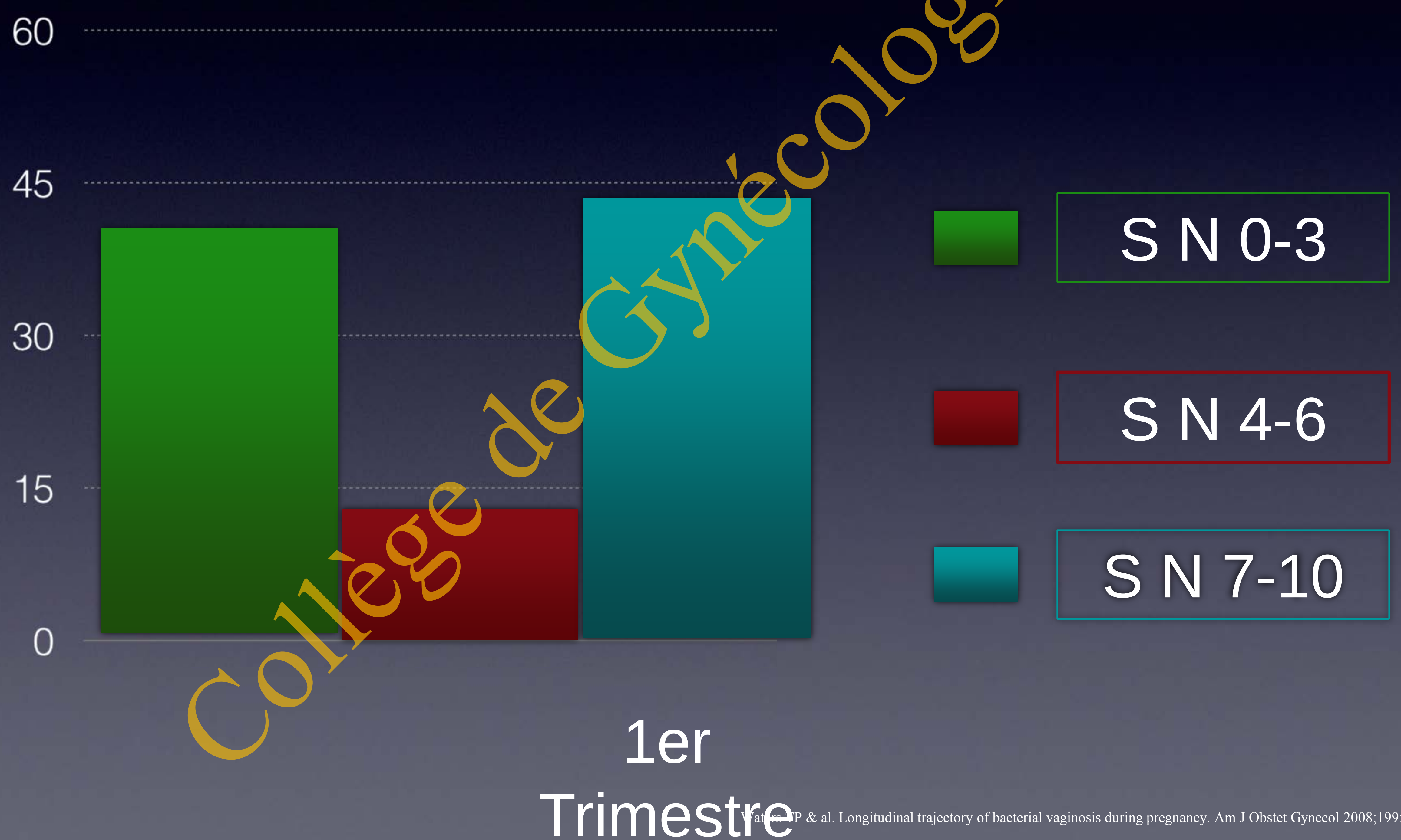
D. Desseauve & Al. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, *Volume 163, Issue 1, July 2012, Pages 30-34* [8]

Bacterial vaginosis prevalence estimates by region, country, and year of study *(continued)*

Location	Study location, date	Study type,* selection process, and sample size	Median or mean age (±SE; range), y	Diagnostic process	BV prevalence, %
South Africa	Durban, 1994 through 1995[126]	168 consecutive women presenting to large urban hospital for first AN visit, EC: <30 wks' gestation	24 (16–44)	NSS	52
Jamaica	Kingston, 1999[127]	269 pregnant women, who were first-time attendees, at 4 AN clinics in Kingston in their second or third trimester	23 (14–40)	NSS	49.1
	Tibetan region of Sichuan, 2007[90]	Conducted at Songpan County, where Tibetans make up about 37% of total population; all women aged 18-72 y were eligible for this study, but selection methodology not clearly defined; 397 women studied; EC: pregnant, ABs in	18–72	Hay-Ison criteria	51.6

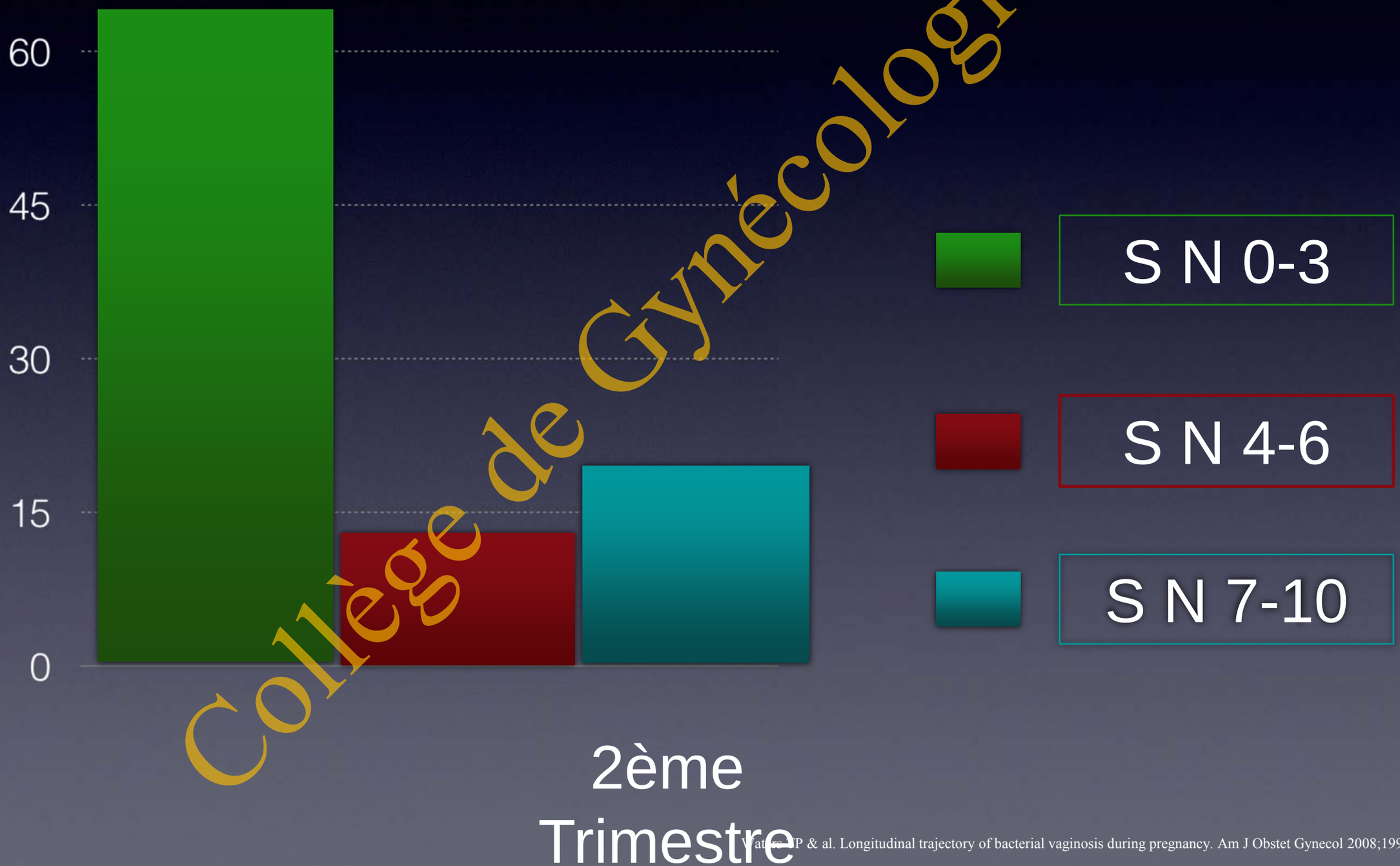
Chris Kenyon & Al. *American Journal of Obstetrics and Gynecology*, ***In Press, Corrected Proof***, *Available online 6 May 2013*

Évolution de la Vaginose bactérienne pendant la grossesse



Watters TP & al. Longitudinal trajectory of bacterial vaginosis during pregnancy. Am J Obstet Gynecol 2008;199:431.e1-431.e5.

Évolution de la Vaginose bactérienne pendant la grossesse



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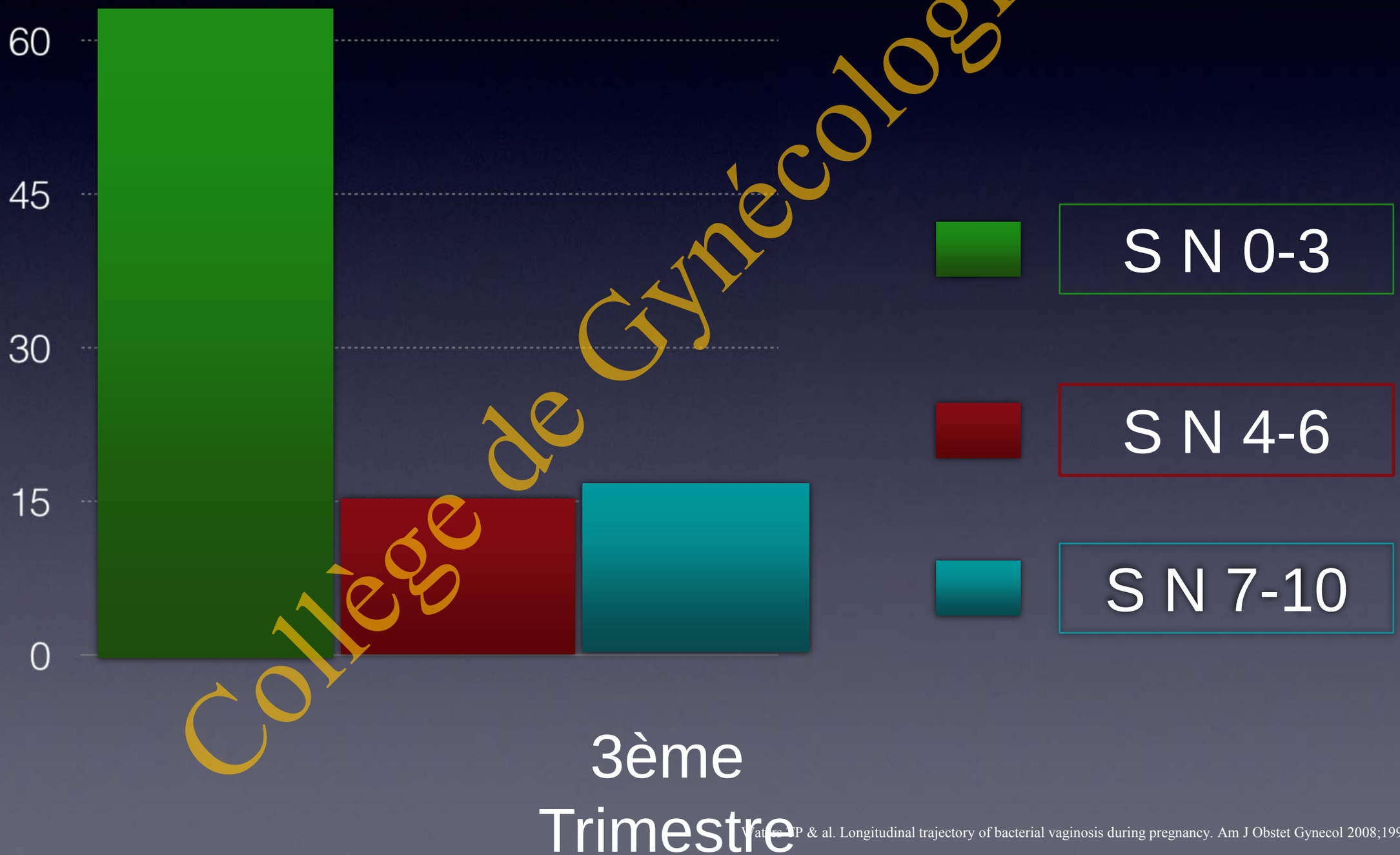

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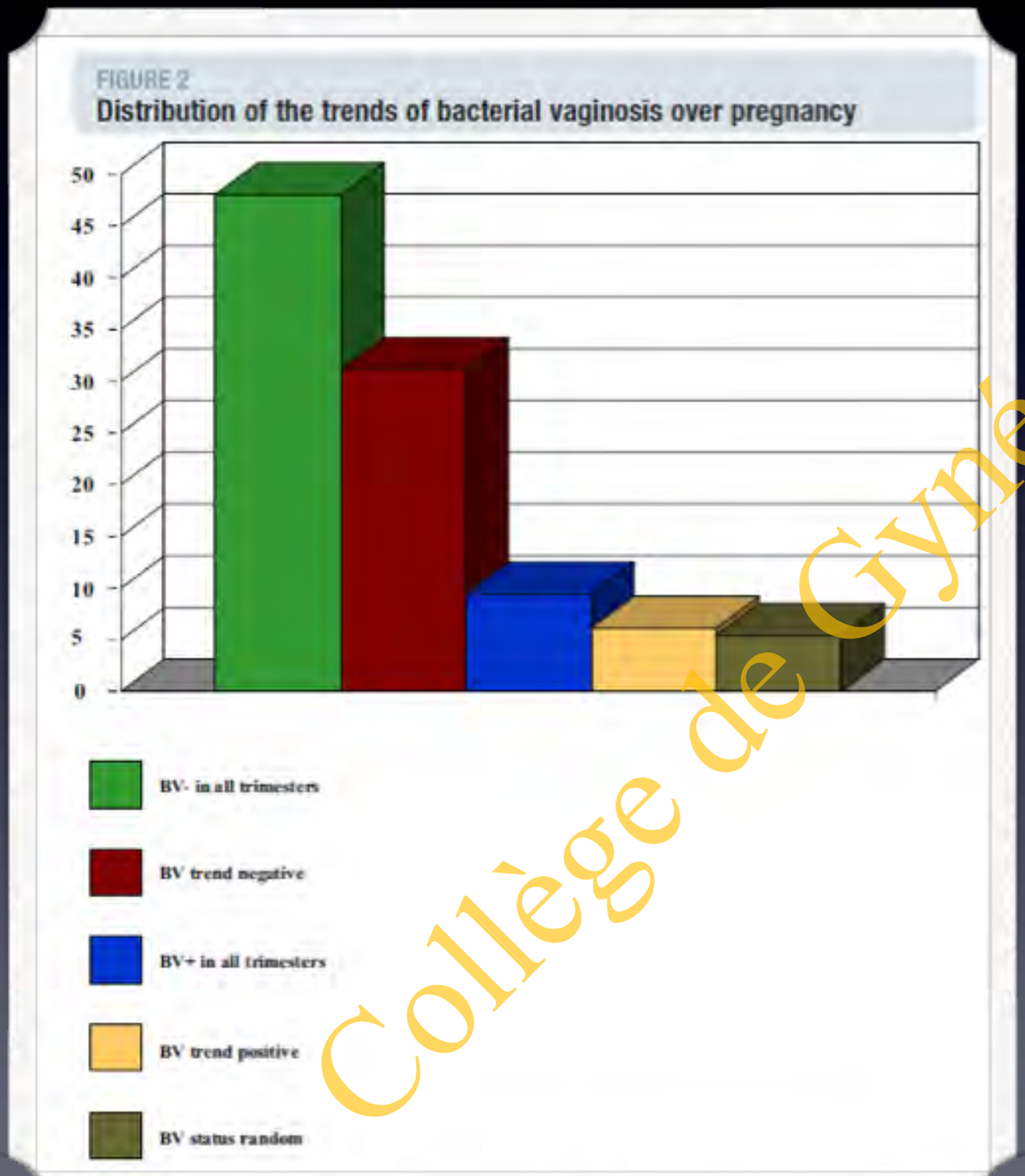
Évolution de la Vaginose bactérienne pendant la grossesse



Résolution spontanée de 30%
6% développeront une VB
À chaque semaine de grossesse passée le risque diminue OR=0.93 [0.91-0.95]

Waters TP & al. Longitudinal trajectory of bacterial vaginosis during pregnancy. Am J Obstet Gynecol 2008;199:431.e1-431.e5.

Facteurs de risques

Table 2
Factors associated with bacterial vaginosis: a multilevel analysis.

	% bacterial vaginosis	OR 95% CI	*p* value	Multilevel logistic regression, *N* = 13,651 aOR 95% CI
Level 1: individual characteristics				
Maternal age (years) (*N* = 14,193)				
<20	11.0	1.80 [1.30–2.38]	0.02	1.39 [1.01–1.93]
20–24	8.9	1.40 [1.18–1.64]		1.19 [1.00–1.42]
25–29	6.5	1.00		1
30–34	5.9	0.90 [0.75–1.08]		0.89 [0.74–1.07]
35–39	6.6	1.00 [0.79–1.28]		0.97 [0.76–1.24]
≥40 years	5.8	0.90 [0.50–1.51]		0.82 [0.47–1.43]
Smoked during pregnancy (*N* = 14,034)				
No	6.3	1.00	<0.001	1
Yes	9.6	1.60 [1.39–1.84]		1.38 [1.19–1.61]
Educational level (*N* = 13,744)				
Post-secondary	5.8	1.00	<0.0001	1
Completed secondary	8.4	1.50 [1.29–1.70]		1.26 [1.08–1.46]
Completed primary	11.5	2.12 [1.63–2.73]		1.69 [1.23–2.23]
History of preterm delivery (*N* = 13,165)				
No	6.9	1.00	0.44	1
Yes	8.4	1.23 [0.98–1.55]		1.15 [0.90–1.47]
Missing values	7.1	1.02 [0.79–1.31]		0.96 [0.73–1.26]

The odds ratios are adjusted for the individual variables (maternal age, smoking during pregnancy, educational level, history of preterm delivery) and the variable of centre zone).

Dépistage au premier trimestre de la grossesse

D. Desseauve & Al. *European Journal of Obstetrics & Gynecology and Reproductive Biology, Volume 163, Issue 1, July 2012, Pages 30-34*

Facteurs de risques

Table 1
Distribution of 476 cases and 450 controls[a], according to selected factors (Italy 2001–2002)

	Case no. (%)	Control no. (%)	OR (95% CI)
Age (years)			
≤28	125 (26.3)	114 (23.4)	–
29–36	123 (25.8)	123 (27.4)	–
37–46	123 (25.8)	103 (22.9)	–
≥47	105 (22.1)	109 (24.3)	–
No. of births			
0	194 (40.8)	171 (38.0)	1[b]
1	113 (23.7)	108 (24.0)	0.9 (0.6–1.3)
2	114 (24.0)	121 (26.9)	0.8 (0.5–1.2)
≥3	55 (11.6)	50 (11.1)	0.9 (0.6–1.6)
Menopausal status			
Pre	411 (86.3)	372 (82.7)	1[b]
Post	65 (13.7)	78 (17.3)	0.7 (0.4–1.2)
Vaginal douche use			
Never	196 (41.4)	216 (48.5)	1[b]
Occasional	249 (52.6)	214 (48.1)	1.3 (1.0–1.7)
≥1/week	28 (5.9)	15 (3.4)	2.0 (1.0–3.9)
χ^2			6.1, $P = 0.01$
Frequency of sexual intercourse[c]			
≤4	131 (32.5)	120 (31.4)	1[b]
5–8	123 (30.5)	140 (36.7)	0.8 (0.6–1.1)
≥9	149 (37.0)	122 (31.9)	1.1 (0.8–1.6)
No. of partners[c]			
1	370 (88.5)	352 (93.1)	1[b]
>1	48 (11.5)	26 (6.9)	1.8 (1.1–2.9)
Wearing tight jeans/trousers			
Never	124 (26.3)	131 (29.5)	1[b]
<1/week	136 (28.9)	149 (33.6)	1.0 (0.7–1.4)
≥1/week	211 (44.8)	164 (36.9)	1.5 (1.0–2.2)
χ^2			5.0, $P = 0.03$

Table 2
Distribution of 476 cases and 450 controls[a], according to contraceptive methods and history of selected medical conditions (Italy 2001–2002)

	Case no. (%)	Control no. (%)	OR (95% CI)
Current oral contraceptive use			
No	358 (75.2)	356 (79.1)	1[b]
Yes	118 (24.8)	94 (20.9)	1.2 (0.9–1.7)
Current IUD use			
No	451 (95.0)	426 (94.7)	1[b]
Yes	24 (5.0)	24 (5.3)	0.9 (0.5–1.7)
Current barrier methods use			
No	411 (86.7)	387 (86.6)	1[b]
Yes	63 (13.3)	60 (13.4)	1.0 (0.7–1.4)
Diabetes			
No	457 (96.4)	437 (97.5)	1[b]
Yes	17 (3.6)	11 (2.5)	1.6 (0.7–3.5)
Antibiotic therapy[c]			
No	412 (87.5)	409 (92.1)	1[b]
Yes	59 (12.5)	35 (7.9)	1.7 (1.1–2.6)
History of BV			
No	271 (56.9)	342 (76.0)	1[b]
Yes	205 (43.1)	108 (24.0)	2.4 (1.8–3.2)
History of vaginal infections			
No	130 (27.3)	161 (35.8)	1[b]
Yes	346 (72.7)	289 (64.2)	1.5 (1.1–2.0)

Hors grossesse

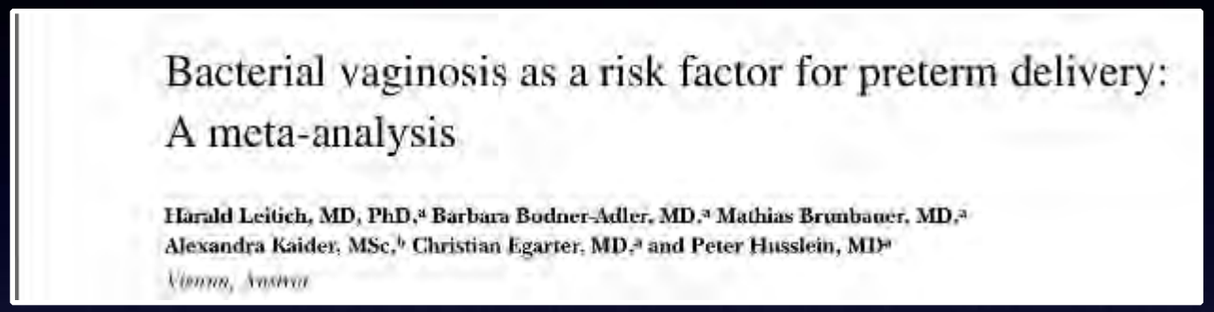
F. Chiaffarino & Al. Risk factors for bacterial vaginosis. European Journal of Obstetrics & Gynecology and Reproductive Biology 117 (2004) 222–226

Complications Obstétricales

Risque :

- d'accouchement prématuré
- De rupture prématurée des membranes
- Chorioamniotite
- Naissance d'enfants de petits poids
- Endométrite du post-partum

Complications Obstétricales



Bacterial vaginosis as a risk factor for preterm delivery: A meta-analysis

Harald Leitich, MD, PhD,[a] Barbara Bodner-Adler, MD,[a] Mathias Brunbauer, MD,[a] Alexandra Kaider, MSc,[b] Christian Egarter, MD,[a] and Peter Husslein, MD[a]
Vienna, Austria

Asymptomatic bacterial vaginosis and intermediate flora as risk factors for adverse pregnancy outcome

Harald Leitich* MD, PhD
Associate Professor of Obstetrics and Gynecology

2003
18 études
20 232 patientes

2007
32 études
30 518 patientes

Harald Leitich & AL, Bacterial vaginosis as a risk factor for preterm delivery: A meta-analysis. Am J Obstet Gynecol 2003;189:139-47

Leitich H, Kiss H. Asymptomatic bacterial vaginosis and intermediate flora as risk factors for adverse pregnancy outcome.Best Pract Res Clin Obstet Gynaecol. 2007 Jun;21(3):375-90.

Complications Obstétricales

2003

2007

Table III. Results of all studies combined

Patients	*Studies included (No.)*	*Patients included (No.)*	*Test of heterogeneity (P value)*	*Model used*	*Odds ratio (95% CI)*
Patients without preterm labor					
Delivery <37 wk					
All patients	13	14740	.0004	Random	2.19 (1.54-3.12)
Singleton	11	14492	.0002	Random	2.40 (1.63-3.54)
Twins	2	248	.37	Fixed	1.16 (0.59-2.29)
Low-risk patients	1	168	—	—	2.35 (1.07-5.19)
High-risk patients	1	190	—	—	2.86 (1.55-5.29)

Patients	Number of studies included	Number of patients included	Test of heterogeneity	Model used	OR (95% CI)
Patients without preterm labor					
Delivery <37 weeks					
All patients	24	24190	$P < 0.000001$	Random	2.16 (1.56–3.00)
Singletons	21	21015	$P < 0.000001$	Random	2.40 (1.69–3.41)
Twins	2	248	$P = 0.37$	Fixed	1.16 (0.59–2.29)
Patients with no previous PTD	2	1365	$P = 0.58$	Fixed	2.63 (1.55–4.44)
Patients with ≥1 previous PTD	2	400	$P = 0.27$	Fixed	2.22 (1.46–3.37)

Screening at <16 wk	3	1400	.04	Random	7.55 (1.80-31.65)
Screening at <20 wk	5	2763	.05	Random	4.20 (2.11-8.39)
Screening at ≥20 wk	9	12439	.27	Fixed	1.53 (1.29-1.82)
Delivery <34 wk					

Screening at <16 weeks	7	3292	$P = 0.001$	Random	2.97 (1.48–5.98)
Screening at <20 weeks	11	9688	$P = 0.00006$	Random	2.15 (1.34–3.43)
Screening at ≥20 weeks	15	15415	$P < 0.000001$	Random	1.89 (1.27–2.83)

Harald Leitich & AL, Bacterial vaginosis as a risk factor for preterm delivery: A meta-analysis. Am J Obstet Gynecol 2003;189:139-47

Leitich H, Kiss H. Asymptomatic bacterial vaginosis and intermediate flora as risk factors for adverse pregnancy outcome.Best Pract Res Clin Obstet Gynaecol. 2007 Jun;21(3):375-90.

Complications Obstétricales

2003

Spontaneous abortion					
All patients	3	856	.06	Random	9.91 (1.99-49.34)
Maternal infection					
All patients	2	3067	.98	Fixed	2.53 (1.26-5.08)

Late miscarriages					
All patients	5	2010	$P = 0.14$	Fixed	6.32 (3.65–10.94)
Maternal infection					
All patients	2	3067	$P = 0.98$	Fixed	2.53 (1.26–5.08)

2007

Patients with preterm labor					
Delivery <37 wk					
All patients	3	162	.02	Random	1.96 (0.37-10.29)
Delivery <34 wk					
All patients	2	112	.35	Fixed	2.28 (0.70-7.43)

Patients with preterm labor					
Delivery <37 weeks					
All patients	5	350	$P = 0.08$	Random	2.38 (1.02–5.58)
Delivery <34 weeks					
All patients	3	466	$P = 0.47$	Fixed	1.59 (0.74–3.42)
Delivery <33 weeks					
All patients	1	354	—	—	2.35 (0.88–6.26)

Harald Leitich & AL, Bacterial vaginosis as a risk factor for preterm delivery: A meta-analysis. Am J Obstet Gynecol 2003;189:139-47

Leitich H, Kiss H. Asymptomatic bacterial vaginosis and intermediate flora as risk factors for adverse pregnancy outcome.Best Pract Res Clin Obstet Gynaecol. 2007 Jun;21(3):375-90.

Complications Obstétricales

Vaginose bactérienne comme marqu[illegible]rématurité?

Pour accou[illegible]SA

La VB n'est pas prédictive de l'accouchement prématuré

[illegible]: 12.8%

[illegible]cificité: 95%

VPP: 35.3%

VPN: 84.3%

F. Goffinet & Al, Bacterial vaginosis: prevalence and predictive value for premature delivery and neonatal infection in women with preterm labour and intact membranes. European Journal of Obstetrics & Gynecology and Reproductive Biology 108 (2003) 146–151

Complications Obstétricales

Flore intermédiaire

Table 5. Intermediate vaginal flora and adverse pregnancy outcome: results of all studies combined in patients with or without preterm labor.

Patients	Number of studies included	Number of patients included	Test of heterogeneity	Model used	OR (95% CI)
Patients without preterm labor					
Delivery <37 weeks					
All patients	5	1653	$P = 0.0007$	Random	2.41 (0.63–9.20)
Patients with ≥1 previous PTD	1	138	–	–	6.01 (2.76–13.11)
Late miscarriages					
All patients	4	1549	$P = 0.26$	Fixed	2.77 (0.94–8.16)
Patients with preterm labor					
Delivery <37 weeks					
All patients	1	105	–	–	1.18 (0.38–3.67)
Delivery <35 weeks					
All patients	1	330	–	–	1.56 (0.86–2.81)
Delivery <33 weeks					
All patients	1	330	–	–	1.90 (0.94–3.84)
Maternal infection					
All patients	1	330	–	–	2.57 (0.56–11.74)
Neonatal infection					
All patients	1	330	–	–	1.59 (0.58-4.33)

Random, Random effects model; Fixed, fixed effects model; PTD, preterm delivery.

7 études
2358 patientes

Leitich H, Kiss H. Asymptomatic bacterial vaginosis and intermediate flora as risk factors for adverse pregnancy outcome.Best Pract Res Clin Obstet Gynaecol. 2007 Jun;21(3):375-90.

Complications Obstétricales

Table 3. Relationship between BV and adverse outcome measures

Adverse outcome parameters	BV + (n = 533) %	BV− (n = 2729)%	OR	95% CI	Adjusted OR	95% CI	Missing data
Delivery at <37 weeks	6.9	4.9	1.5	1.0–2.1	1.5	1.0–2.1	0
Delivery at <32 weeks	2.1	1.0	2.0	1.0–4.1	2.4	1.2–4.9	0
Delivery at <28 weeks	0.6	0.5	1.0	0.3–3.4	1.1	0.3–4.0	0
Birthweight <2500 g	7.0	4.0	1.8	1.2–2.7	2.0	1.3–2.9	16
Delivery at <37 weeks and birthweight <2500 g	5.7	2.4	2.5	1.6–3.8	2.5	1.6–3.9	16
Indicated preterm delivery	3.2	1.0	3.3*	1.8–6.1	3.6*	1.9–6.7	0
Indicated term delivery	19.5	17.4	1.2*	0.9–1.5			0
Spontaneous preterm delivery	3.8	3.8	1.0*	0.6–1.7			0
Clinical chorioamnionitis	2.6	1.1	2.5	1.3–4.8	2.7	1.4–5.1	6
Endometritis	0.6	0.4	1.4	0.4–5.0			8
PPROM	1.7	2.3	0.7	0.4–1.5			54

*Calculated with comparison with spontaneous delivery at term. For adjusted OR, see text.

Svare J et al. Bacterial vaginosis in a cohort of Danish pregnant women: prevalence and relationship with preterm delivery, low birthweight and perinatal infections. BJOG 2006;113:1419–1425

Table 2
Pregnancy outcome according to bacterial vaginosis results

	Normal flora (N = 254)	Intermediate flora (N = 76)	Bacterial vaginosis (N = 24)	p
Gestational age at delivery				
Mean ± S.D.	36.5 ± 3.3	35.8 ± 3.9	35.3 ± 5.4	ns
Delivery <33 weeks, N (%)	27 (10.6)	14 (18.4)	6 (25.0)	0.02
Delivery <35 weeks, N (%)	50 (19.7)	21 (27.6)	6 (25.0)	ns
Delivery in 7 days	14 (5.5)	8 (10.5)	2 (8.3)	ns
Chorioamnionitis	4 (1.6)	3 (4.1)	1 (4.3)	ns
Intrapartum fever	10 (4.0)	0	1 (4.2)	ns
Neonatal infection	13 (5.2)	6 (7.9)	2 (8.7)	ns

F. Goffinet & Al, Bacterial vaginosis: prevalence and predictive value for premature delivery and neonatal infection in women with preterm labour and intact membranes. European Journal of Obstetrics & Gynecology and Reproductive Biology 108 (2003) 146–151

Perinatal mortality					
All patients	4	1089	$P = 0.33$	Fixed	1.03 (0.40−2.63)
Neonatal infection					
All patients	3	3775	$P = 0.09$	Random	1.96 (0.54−7.14)

Leitich H, Kiss H. Asymptomatic bacterial vaginosis and intermediate flora as risk factors for adverse pregnancy outcome.Best Pract Res Clin Obstet Gynaecol. 2007 Jun;21(3):375-90.

Comparison of adverse maternal and fetal outcome among BV and non-BV cases

Variable	Non-BV		BV		OR	P-value
Maternal	N=108	%	N=47	%	(CI-95%)	
Second trimester Abortion*	2	1.85	6	12.76	7.50 (1.28-56.0)	0.01
PROM	5	4.62	5	10.63	2.36 (0.55-12.04)	0.33
Preterm labor*	10	9.25	12	25.53	3.22 (1.17-8.96)	0.02
Puerperal pyrexia	2	1.85	2	4.25	2.27 (0.22-23.40)	0.78
Fetal	N=102	%	N=40	%		
Low birthweight (<2500 g)	24	23.50	13	32.50	1.56 (0.65-3.76)	0.38
Birth asphyxia* (Apgar <5)	1	0.98	4	10.00	11.20 (1.12-272.0)	0.02
Prematurity	5	4.90	6	15.00	3.42 (0.85-14.0)	0.10

*Statistical significance (P<0.05). Abortion and stillbirths due to unrelated problems are excluded from fetal figures.

R. Tripathia & Al, Bacterial vaginosis and pregnancy outcome. International Journal of Gynecology and Obstetrics 83 (2003) 193–195

Recommandations actuelles

HAS 2001

Agence Nationale d'Accréditation et d'Évaluation en Santé

RECOMMANDATIONS POUR LA PRATIQUE CLINIQUE

Prévention anténatale du risque infectieux bactérien néonatal précoce

Recommandations

SEPTEMBRE 2001

II. DANS QUELLES CIRCONSTANCES FAUT-IL RECHERCHER UNE INFECTION CERVICO-VAGINALE CHEZ LA FEMME ENCEINTE ?

À l'exception des femmes ayant un antécédent d'accouchement prématuré, le prélèvement vaginal systématique n'est pas recommandé en début de grossesse (grade A).

Il est recommandé de réaliser un prélèvement vaginal :

- en cas de signes cliniques de vulvo-vaginite chez la femme enceinte : prurit vulvaire, sensations de brûlures cervico-vaginales, leucorrhées colorées ou nauséabondes (grade B) ;
- en cas de menace d'accouchement prématuré, de rupture prématurée des membranes ou de suspicion de chorioamniotite (grade B);
- systématiquement en début de grossesse pour rechercher une vaginose bactérienne en cas d'antécédent d'accouchement prématuré, car dans ce groupe à risque, le traitement des vaginoses bactériennes asymptomatiques diminue le taux de ruptures prématurées des membranes et d'accouchements prématurés (grade A).

CNGOF 2002

C N G O F

La menace d'accouchement prématuré à membranes intactes

Recommandations pour la pratique clinique

3. Indication des antibiotiques en cas de MAP à membranes intactes

Il n'y a pas d'arguments formels en faveur d'un traitement antibiotique lorsque la MAP est associée à un prélèvement vaginal positif (germes banals, *ureaplasma* ou *chlamydia*) ou à une vaginose bactérienne (NP4).

Recommandations actuelles

SOGC 2008

Dépistage et prise en charge de la vaginose bactérienne pendant la grossesse

Recommandations

Il n'existe présentement aucun consensus quant à la question de savoir s'il faut procéder au dépistage ou à la prise en charge de la vaginose bactérienne, au sein de la population générale de femmes enceintes, afin de prévenir la survenue d'issues indésirables (telles que l'accouchement prématuré).

1. Chez les femmes enceintes symptomatiques, le dépistage et la prise en charge de la vaginose bactérienne sont recommandés pour la résolution des symptômes. Les critères diagnostiques sont les mêmes tant pour les femmes enceintes que pour celles qui ne le sont pas. (I-A)
2. La prise en charge au moyen d'antibiotiques, administrés par voie orale ou vaginale, est acceptable pour l'obtention d'une guérison chez les femmes enceintes qui présentent une vaginose bactérienne symptomatique et qui ne courent que de faibles risques de connaître des issues obstétricales indésirables. (I-A)
3. Les femmes asymptomatiques et les femmes chez lesquelles aucun facteur de risque d'accouchement prématuré n'a été identifié ne devraient pas être systématiquement soumises au dépistage ou à la prise en charge de la vaginose bactérienne. (I-B)
4. Les femmes qui courent des risques accrus d'accouchement prématuré pourraient tirer profit de la mise en œuvre systématique du dépistage et de la prise en charge de la vaginose bactérienne. (I-B)
5. Lorsqu'un traitement visant la prévention des issues de grossesse indésirables est mis en œuvre, il devrait faire appel à du métronidazole, à raison de 500 mg par voie orale deux fois par jour pendant sept jours, ou à de la clindamycine, à raison de 300 mg par voie orale deux fois par jour pendant sept jours. Le traitement topique (par voie vaginale) n'est pas recommandé à cette fin. (I-B)
6. Un nouveau dépistage devrait être effectué un mois à la suite du traitement afin de s'assurer de la guérison. (III-L)

SOGC CLINICAL PRACTICE GUIDELINE, Screening and Management of Bacterial Vaginosis in Pregnancy. J Obstet Gynaecol Can 2008;30(8):702–708

U.S Préventive Services Task Force 2008

CLINICAL GUIDELINES | Annals of Internal Medicine

Screening for Bacterial Vaginosis in Pregnancy to Prevent Preterm Delivery: U.S. Preventive Services Task Force Recommendation Statement

Figure. **Screening for bacterial vaginosis in pregnancy to prevent preterm delivery: clinical summary of a U.S. Preventive Services Task Force Recommendation.**

Annals of Internal Medicine

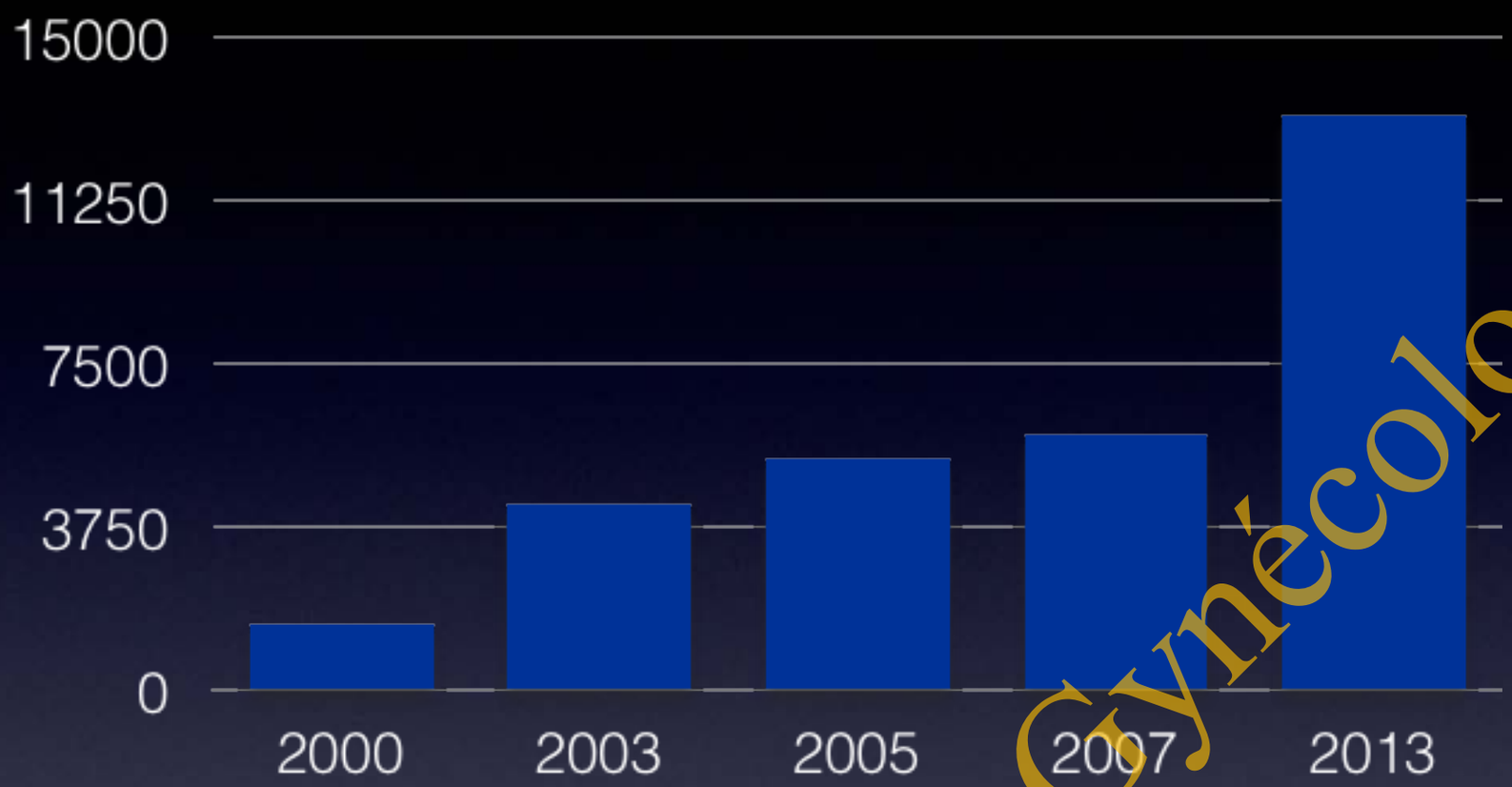
Screening for Bacterial Vaginosis: Clinical Summary of U.S. Preventive Services Task Force Recommendation

Population	Asymptomatic Pregnant Women without Risk Factors for Preterm Delivery	Asymptomatic Pregnant Women with Risk Factors for Preterm Delivery
Recommendation	Do not screen Grade: D	No recommendation Grade: I [Insufficient Evidence]
Risk assessment	**Risk factors for preterm delivery include:** • African-American women • Pelvic infection • Previous preterm delivery Bacterial vaginosis is more common among African-American women, women of low socioeconomic status, and women who have previously delivered low-birthweight infants.	
Screening tests	Bacterial vaginosis is diagnosed by using the Amsel clinical criteria or Gram stain. When using the Amsel criteria, 3 of 4 criteria must be met to make a clinical diagnosis: 1. Vaginal pH >4.7 2. The presence of clue cells on wet mount 3. Thin homogeneous discharge 4. Amine "fishy odor" when potassium hydroxide is added to the discharge	
Screening intervals	Not applicable.	
Treatment	Treatment is appropriate for pregnant women with symptomatic bacterial vaginosis infection. Oral metronidazole and oral clindamycin, as well as vaginal metronidazole gel or clindamycin cream, are used to treat bacterial vaginosis. The optimal treatment regimen is unclear.*	

For a summary of the evidence systematically reviewed in making these recommendations, the full recommendation statement, and supporting documents, go to www.preventiveservices.ahrq.gov. *The Centers for Disease Control and Prevention recommends 250 mg oral metronidazole 3 times daily for 7 days as the treatment of bacterial vaginosis in pregnancy.

U.S. Preventive Services Task Force, Screening for Bacterial Vaginosis in Pregnancy to Prevent Preterm Delivery: U.S. Preventive Services Task Force Recommendation Statement. Ann Intern Med. 2008;148:214-219.

Cochrane



Nombre de patientes

Nombre d'études

Conclusions des meta analyses

	2000	2003	2005	2007
Antibiothérapie Éradication VB	OR=0,22	OR=0,21	OR=0,21	OR=0,17
Prévention prematurite	Tendance	Non	Non	Non
Groupe à risque	OR=0,37	Non	Non	Non
Dépistage groupe à risque	Tendance Oui	Tendance oui	Tendance Oui	Tendance Oui <20SA
Prévention RPM		OR=0,32	Non sauf si groupe à risque	Non sauf si groupe à risque
Prévention faible poids		Si groupe à risque	Si groupe à risque	Si groupe à risque
Traitement < 20 SA				Oui

Cochrane 2013 traitement de la Vaginose bactérienne

- Éradication de la vaginose: antibiotiques vs placebo RR= 0,42 [0,31-0,56]
- Diminution du risque de FC tardive RR=0,20 [0,05-0,76]
- Pas de diminution d'accouchement prématuré même dans le groupe à risque
- Pas de diminution des RPM ni poids des enfants
- Pas de diminution d'accouchement prématuré si antibiothérapie débutée tôt avant 20 SA
- Pas de différence entre antibiothérapie orale ou vaginale sur la prématurité
- Diminution hospitalisation en néonatalogie si antibiothérapie PO

CCL: pas de dépistage ni de traitement chez toutes les patientes

Autre meta analyse

FIGURE 2
Preterm birth at <37 weeks of gestation (5 studies; fixed effects model)

Study or Subgroup	Clindamycin Events	Clindamycin Total	Placebo/no treatment Events	Placebo/no treatment Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Kekki 2001	9	187	7	188	9.6%	1.29 [0.49, 3.40]
Kiss 2004	5	149	8	143	11.2%	0.60 [0.20, 1.79]
Lamont 2003	8	208	19	201	26.6%	0.41 [0.18, 0.91]
Larsson 2006	11	395	10	390	13.8%	1.09 [0.47, 2.53]
Ugwumadu 2003	11	244	28	241	38.7%	0.39 [0.20, 0.76]
Total (95% CI)		**1183**		**1163**	**100.0%**	**0.60 [0.42, 0.86]**
Total events	44		72			

Heterogeneity: Chi² = 6.82, df = 4 (P = 0.15); I² = 41%
Test for overall effect: Z = 2.74 (P = 0.006)

Risk Ratio M-H, Fixed, 95% CI
0.1 0.2 0.5 1 2 5 10
Favors experimental Favors control

df, degrees of freedom; *M-H*, Mantel-Haenszel test.
Lamont. Clindamycin for the prevention of preterm birth. Am J Obstet Gynecol 2011.

- Traitement par clindamycine avant 20 SA
- 5 études
- 2346 patientes

TABLE 3
Effect of clindamycin on spontaneous preterm birth and perinatal/maternal outcomes

Outcome	Number of trials	Number of events/total number or total number: Clindamycin, n/N (%)	Placebo, n/N (%)	Relative risk or mean difference (95% CI)	I^2, %
Spontaneous preterm birth <37 weeks of gestation	5[80,85-87,145]	44/1183 (3.7)	72/1163 (6.2)	0.60 (0.42–0.86)[a]	41
Late miscarriage	2[86,87]	2/639 (0.3)	12/631 (1.9)	0.20 (0.05–0.76)	0
Spontaneous preterm birth <37 weeks of gestation or late miscarriage	2[86,87]	24/639 (3.8)	50/631 (7.9)	0.53 (0.20–1.40)	73
Spontaneous preterm birth <33 weeks of gestation	2[86,87]	4/639 (0.6)	9/631 (1.4)	0.44 (0.14–1.41)	0
Gestational age at delivery, wks	2[85,87]	442	434	0.64 (0.28–1.01)	0
Low birthweight	2[85,87]	38/444 (8.6)	38/420 (9.0)	0.95 (0.62–1.45)	0
Very low birthweight	2[85,87]	13/444 (2.9)	8/420 (1.9)	1.54 (0.64–3.67)	37
Birthweight, g	1[80]	244	241	−12.0 (−128.6 to 104.2)	NA
Admission to neonatal intensive care unit	1[80]	18/238 (7.6)	23/228 (10.1)	0.75 (0.42–1.35)	NA
Stillbirth	2[85,87]	2/386 (0.5)	4/381 (1.0)	0.49 (0.09–2.67)	0
Peripartum infection	1[80]	21/187 (11.2)	33/188 (17.6)	0.64 (0.38–1.06)	NA
Adverse effects	2[80,87]	23/426 (5.4)	14/427 (3.3)	1.65 (0.86–3.16)	11

CI, confidence interval; *NA*, not applicable.
[a] Fixed effects model.
Lamont. Clindamycin for the prevention of preterm birth. Am J Obstet Gynecol 2011.

- Diminution de la prématurité
- Diminution de FC tardive
- Pas d'effet sur poids, hospitalisation en néonatalogie ou sur infection maternelle

Lamont RF & Al. Treatment of abnormal vaginal flora in early pregnancy with clindamycin for the prevention of spontaneous preterm birth: a systematic review and metaanalysis. American Journal of Obstetrics and Gynecology 2011;205(3):177-90

Traitement

Traitement des patientes symptomatiques = patientes les plus à risque de prématurité?

Flagyl PO 500mg X2 5 jours ou vaginale
Clindamycine 300 mg X2 5 jours PO
Crème clindamycine n'existe pas en France

Résistance à la clindamycine

Hors grossesse

Trtt VB clindamycine intravaginal vs metronidazole intravaginal 5 jours

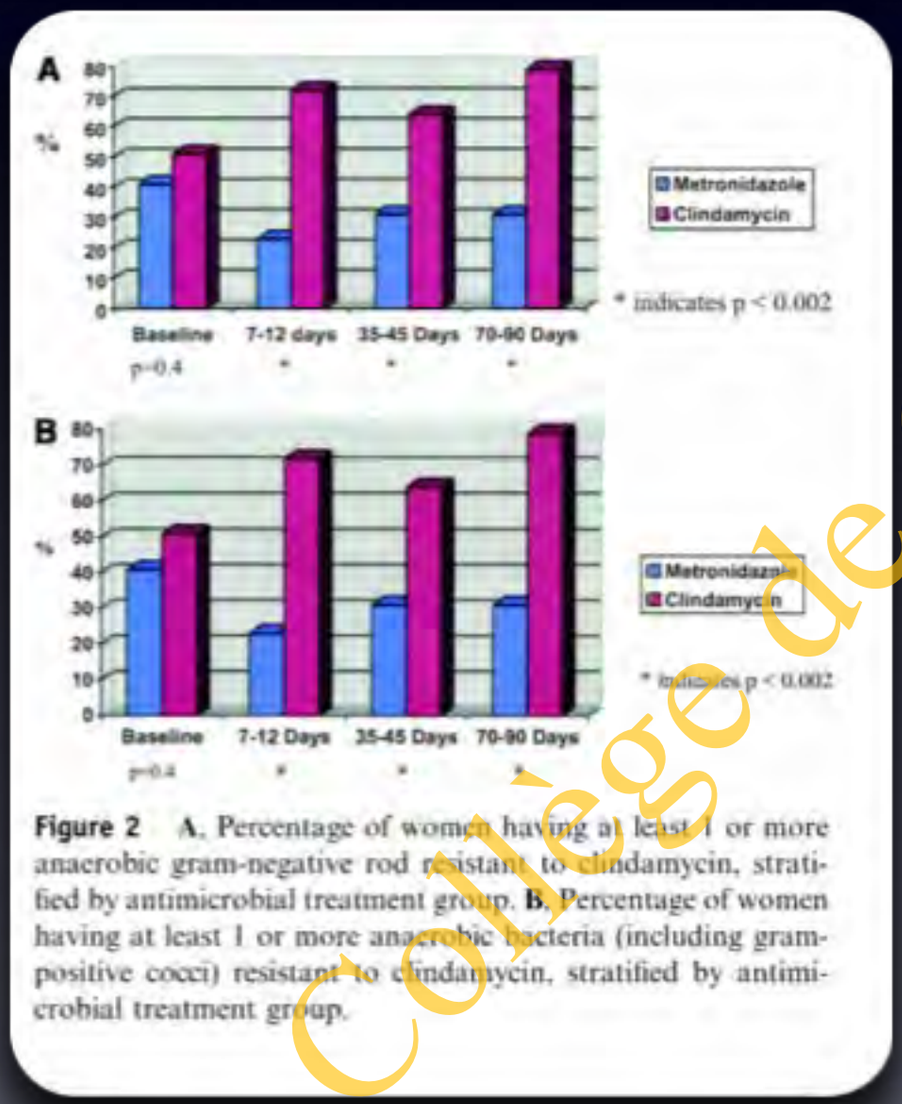


Figure 2 A, Percentage of women having at least 1 or more anaerobic gram-negative rod resistant to clindamycin, stratified by antimicrobial treatment group. **B**, Percentage of women having at least 1 or more anaerobic bacteria (including gram-positive cocci) resistant to clindamycin, stratified by antimicrobial treatment group.

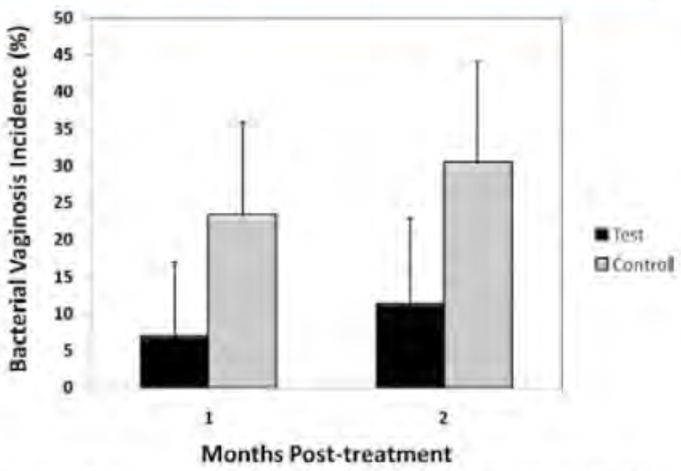
Moins de 1% des bactéries anaerobies présentent une résistance au metronidazole contre 17% à la à la clindamycine et 37% après Trtt

Richard H. Beigi et al. Antimicrobial resistance associated with the treatment of bacterial vaginosis. American Journal of Obstetrics and Gynecology (2004) 191, 1124e9

Traitement

Adjonction de probiotiques
Diminue le taux de récidive

FIGURE 2
Bacterial vaginosis incidence through 2 months after treatment

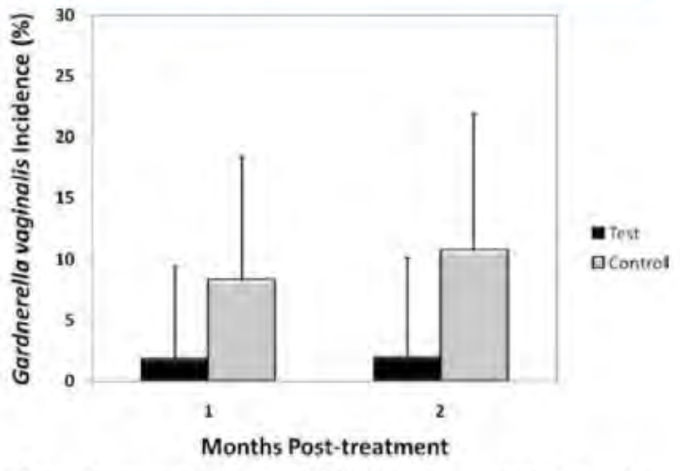


Error bars represent 95% confidence intervals.

Ya. Vaginal probiotic capsules for recurrent BV. Am J Obstet Gynecol 2010.

En dehors de la grossesse
Chine
Probiotiques 1 capsule vaginale pdt 1 semaine- arrêt 1 semaine et reprise Trtt 1 semaine VS placebo

FIGURE 3
***Gardnerella vaginalis* incidence through 2 months after treatment**



Error bars represent 95% confidence intervals.

Ya. Vaginal probiotic capsules for recurrent BV. Am J Obstet Gynecol 2010.

À 2 mois
15,8% vs 45%. p<0,01

À 2 mois
3,5% vs 18,3%. p=0,02

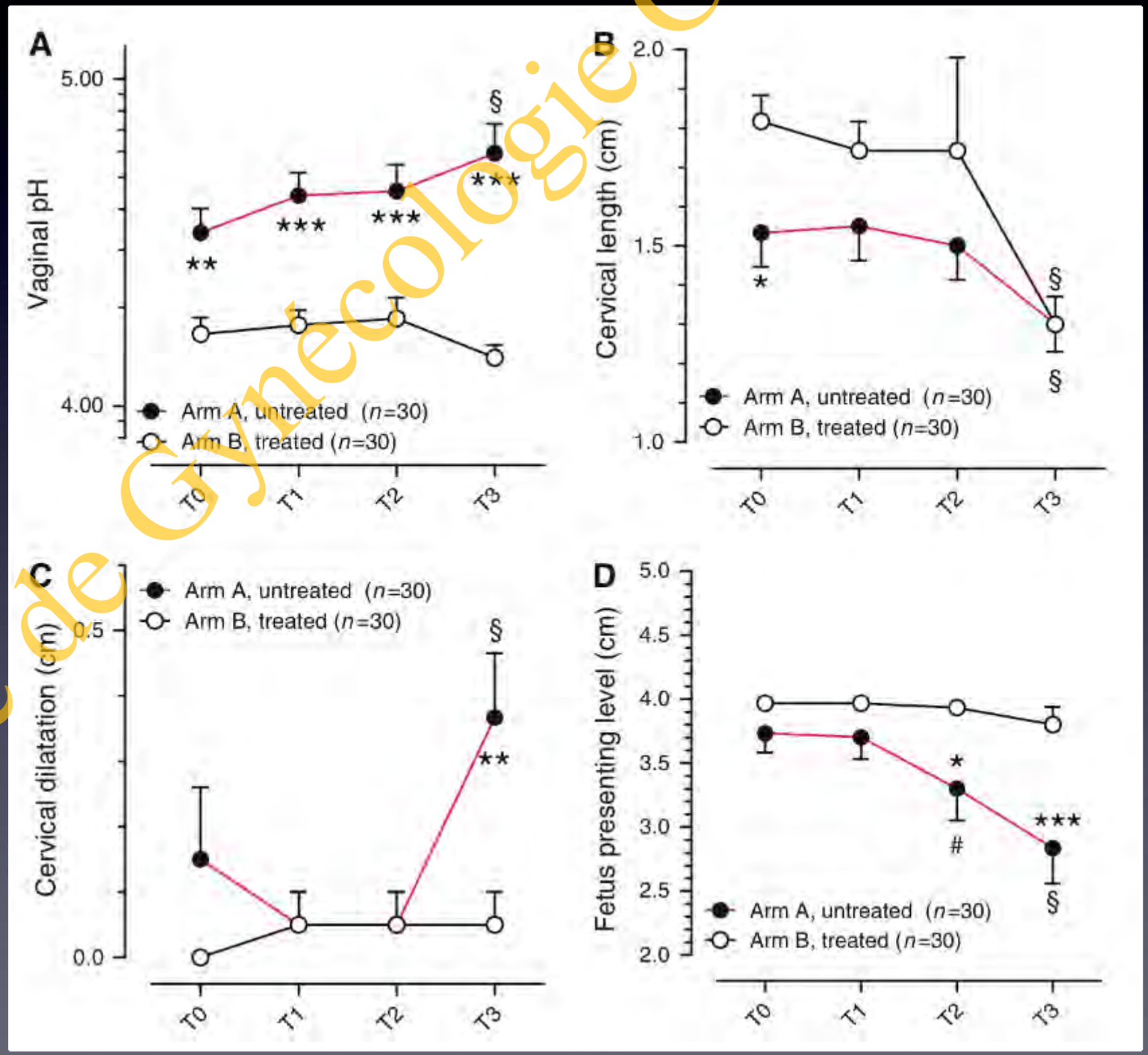
Wang Ya & Al. Efficacy of vaginal probiotic capsules for recurrent bacterial vaginosis: a double-blind, randomized,placebo-controlled study. Am J Obstet Gynecol 2010;203:120.e1-6

Probiotiques

Pendant la grossesse

60 patientes
Entre 16 et 22 SA
1 cp par semaine intra vaginal pendant 12 semaines VS placebo

Évaluation toutes les 4 semaines



Nemanja StojanoviT & Al. Normal vaginal Xora, disorders and application of probiotics in pregnancy. Arch Gynecol Obstet (2012) 286:325–332

Probiotiques

Cochrane 2012

Pas de diminution de la prématurité < 32 SA ou < 37 SA

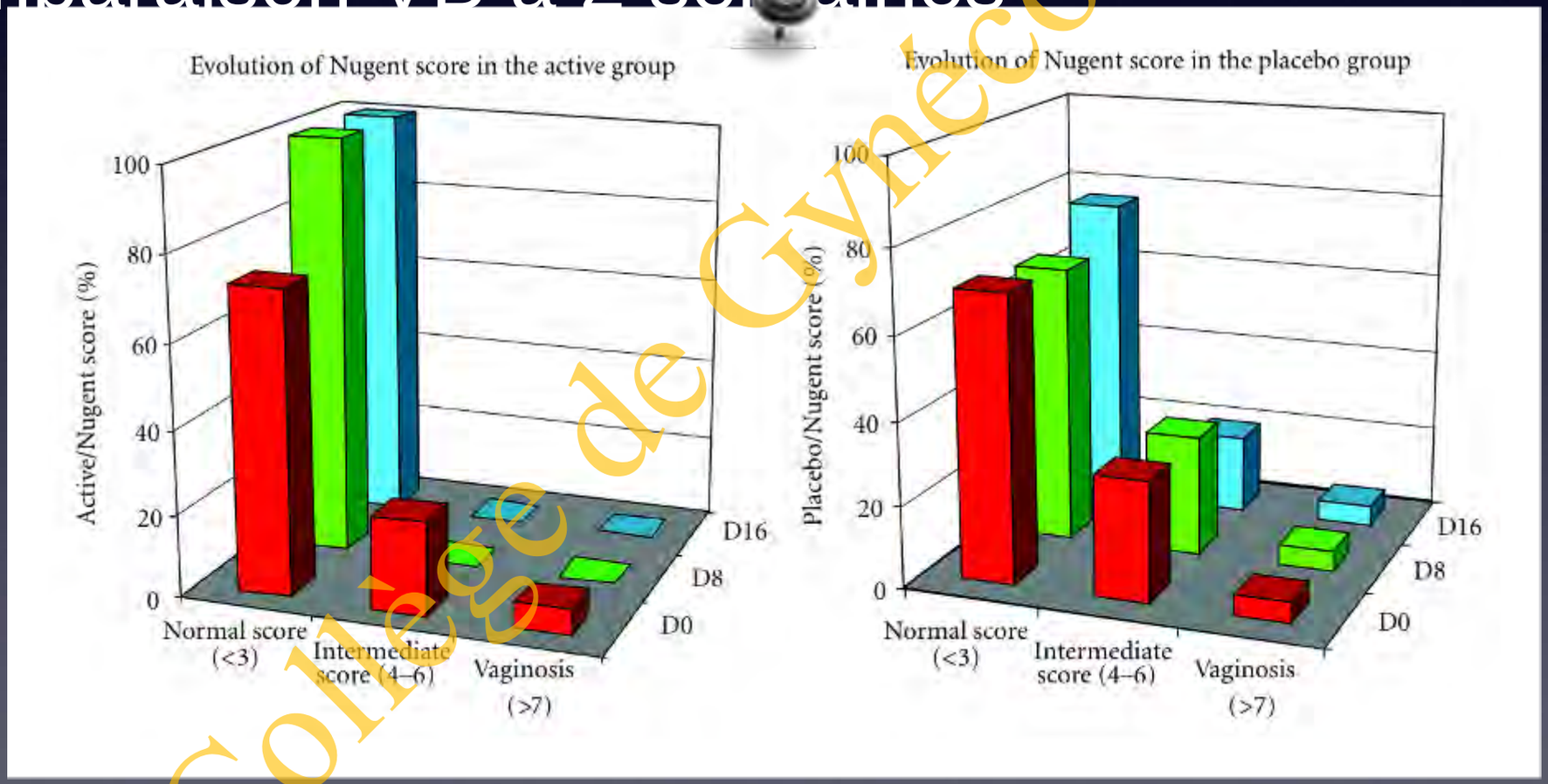
Diminution du risque d'infection vaginale RR=0,19 [0,08-0,48]

Données insuffisantes sur l'impact des pro biotiques sur la prématurité et ses complications

Othman M, Alfirevic Z, Neilson JP. Probiotics for preventing preterm labour (Review). The Cochrane Library 2012, Issue 2

PrEbiotiques

Hors grossesse
Après 1 sem de metronidazole
Gel vaginal 1/j pdt 2 semaines vs placebo
Comparaison VB à 2 semaines



Isabelle Coste et AlSafety and Efficacy of an Intravaginal Prebiotic Gel in the Prevention of Recurrent Bacterial Vaginosis: A Randomized Double-Blind.Obstetrics and Gynecology International Volume 2012, Article ID 147867, 7 p

Supplementation en Vitamine D

Table 3. Cohort and case–control studies on pregnancy and pregnancy-related diseases.

Outcome	Article (reference no.)	Location	Participants	Determinant	Determined at	Association	Statistics (95% CI in brackets)
Bacterial vaginosis	Bodnar et al. 2009 (44)	Pennsylvania, USA	469 pregnant women	25OHD <50 vs. ≥75 nmol/L	<16 weeks gestation	Nugent score 7+	Adjusted PR 1.26 (1.01–1.57)
	Davis et al. 2010 (45)	Maryland, USA	80 pregnant women	25OHD	18 or 28 weeks gestation	Bacterial vaginosis (not defined)	Adjusted regression, OR 4.4, $p = 0.02$
	Hensel et al. 2011 (46)	USA	440 pregnant women	25OHD <75 vs. ≥75 nmol/L	N/A	Nugent score 7+	Adjusted OR 2.87 (1.13–7.28)
	Dunlop et al. 2011 (47)	Tennessee, USA	160 pregnant women	25OHD <30 vs. ≥30 nmol/L	At delivery	Nugent score 7+	Adjusted OR 5.11 (1.19–21.97)

Christesen HT, Falkenberg T, Lamont RF , Jørgensen JS. The impact of vitamin D on pregnancy: a systematic review. Acta Obstet Gynecol Scand 2012;91:1357-1367

Conclusion

- Entité complexe
- Diagnostique clinique ou sur le score de Nugent
- Facteur de risque de prématurité et de fausse couche tardive
- Une seule certitude: une patiente symptomatique doit être traitée
- L'adjonction de probiotiques doit faire ses preuves d'efficacité sur la prévention de la prématurité
- Certaines notions sont remises en causes

Conclusion

La vaginose bactérienne est un rébus enveloppée de mystère au sein d'une énigme