




Vulvovaginal atrophy: A postpartum perspective

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Background

- Postpartum hormone fluctuations
 - Decreased estrogen in all parturients
 - Persistent estrogen depression in lactating mothers
- Postpartum = transient atrophic state
 - Evidence of vaginal atrophy seen in 30-70% of postpartum women

McLennan MT, McLennan CE. Hormonal Patterns in Vaginal Smears from Puerperal Women. *International Academy of Cytology*. 1975;19:5431-433.

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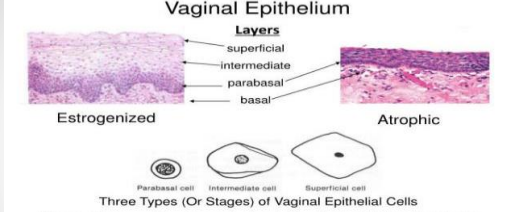
Disclosures

- We have no financial relationships to disclose

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Vaginal Epithelium

Layers



Estrogenized **Atrophic**

Parabasal cell Intermediate cell Superficial cell

Three Types (Or Stages) of Vaginal Epithelial Cells

All scored to quantify estrogenization in the **Vaginal Maturation Index**

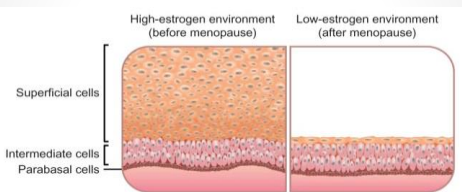
The Vaginal Maturation Index quantifies the relative proportion of the vaginal parabasal (P), intermediate (I), and superficial (S) cells presented as % P / % I / % S.

Source: Mills, *Histology for Pathologists*, 3rd Edition; LWW, 2006. Wheater, *Functional Histology*, 2nd Edition; Bibbo, 1997

https://image1.slideserve.com/2082117/slide4-n.jpg

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Background



High-estrogen environment (before menopause) Low-estrogen environment (after menopause)

Superficial cells
Intermediate cells
Parabasal cells

Reiter, S. Barriers to effective treatment of vaginal atrophy with local estrogen therapy. *Int J Gen Med*. 2013; 6:153-158.

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Objectives

- Define rates of postpartum vulvovaginal atrophy in a modern cohort
- Identify differences in atrophy by lactation status
- Explore associations of atrophy with sexual function

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Methods

- Enrolled women postpartum from a singleton live birth August 2016 - January 2019
 - Chart abstraction: demographics, delivery data
- Questionnaires at delivery, 6- & 10-weeks PP:
 - Female Sexual Function Index (FSFI)
 - Vulvovaginal Symptom Questionnaire (VSQ)
 - Lactation information
- Vaginal smear slides collected at PP appointment
 - Vaginal maturation index (VMI) by pathologist
 - Atrophy: $\geq 10\%$ parabasal cells

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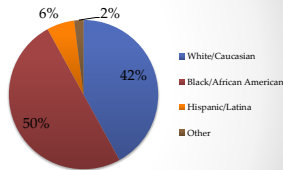
Results

- Atrophy identified in 34.6% of postpartum women regardless of lactation status
- Atrophy rate based on feeding status:
 - Exclusively breast feeding: 6/16 (37.5%)
 - Not exclusively breast feeding: 7/14 (50.0%)
- There was no significant difference in atrophy between exclusively breast feeding versus nonexclusively breast feeding women ($p = 0.41$)

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Results

- 166 postpartum women
- Demographics
 - Mean age 27 ± 6 yrs
 - Mean BMI 34 ± 7 kg/m²
 - Median parity: 2
 - 63% SVD
 - 85% Nonsmokers
 - Mean infant weight 3258 ± 474 g



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Results

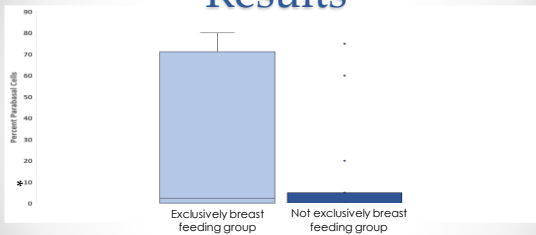


Figure 1. Percent parabasal cells by feeding status in postpartum women. Exclusively breast feeding women (n=14) with more parabasal cells compared to nonexclusively breast feeding women (n=16).

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Results



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Results

Vulvovaginal Symptom Questionnaire (VSQ)

Time of Survey	Atrophy*	Avg. Score	p value
Enrollment	No	28	0.74
	Yes	18	0.74
6-week Postpartum	No	18	0.24
	Yes	11	0.35
10-week Postpartum	No	14	0.81
	Yes	7	0.78

Lower scores associated with more vulvovaginal symptoms

Female Sexual Function Index (FSFI)

Time of Survey	Atrophy*	Avg. Score	p value
Enrollment	No	30	0.94
	Yes	17	0.94
6-week Postpartum	No	18	0.42
	Yes	12	0.40
10-week Postpartum	No	14	0.33
	Yes	7	0.30

Score of < 26 is consistent with sexual dysfunction symptoms

*Atrophy as designated by $\geq 10\%$ parabasal cells

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Conclusions

- Vulvovaginal atrophy affects more than 1/3 of postpartum women, regardless of infant feeding status
- VSQ and FSFI scores were lower in women with atrophy, though differences did not reach significance.

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Conclusions

- Limitations:
 - Limited sample size
 - Missing data points
- Strengths
 - 1st study to address this topic in modern cohort
- Further studies are needed to study the impact of vaginal atrophy on symptoms and sexual function in postpartum women

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Questions?

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