POSTER SESSION

Monday, April 7, 2025

10:15 AM - 2:00 PM

POSTERS

01. Hypnobirthing and Its Effects on Pain Management, Birthing Outcomes, and Psychological Well-Being of Mothers: A Literature Review

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This literature review examines the effects of hypnobirthing on pain management, birthing outcomes, and maternal psychological well-being across 18 studies.

NEW YORK INSTITUTE OF TECHNOLOGY

College of Osteopathic Medicine
at Arkansas State University

Hypnobirthing and its effects on Pain Management, Birthing Outcomes, and Psychological well-being of mothers: A Literature Review

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Abstract

Objective: This literature review examines the impact of hypnobirthing on pain management, birthing outcomes, and maternal psychological well-being.

Methods: A systematic search was conducted using keywords related to hypnosis, childbirth, and labor pain. Eighteen randomized controlled trials (RCTs) published within the last 20 years were analyzed.

Results: The majority of studies (15/18) demonstrated significant reductions in pain intensity and decreased reliance on pain medication among hypnobirthing participants. Maternal satisfaction was higher in hypnobirthing groups, with some studies reporting improved APGAR scores and lower rates of labor v. Psychological benefits included increased confidence, reduced anxiety, and more positive childbirth experiences.

Conclusion: Hypnobirthing shows promise as a non-pharmacological intervention for labor pain relief and psychological well-being. Further large-scale, standardized research is needed to validate its effectiveness and optimize clinical guidelines.

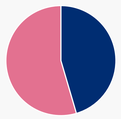
Background

Childbirth is a transformative experience but comes with pain and psychological stress with long term impact. Pharmacological pain management is a common intervention during childbirth, but there is a growing interest in utilizing non-pharmacological intervention during childbirth.

Hypnobirthing is a childbirth preparation method that combines visualization, meditation, affirmations, deep breathing, and relaxation to enhance birthing experiences. As an approachable intervention that is cost-effective with very few complications, hypnobirthing has potential to supplement existing interventions for childbirth.

This literature review aims to evaluate the existing research on hypnobirthing and its effects on antepartum, intra-partum, and postpartum outcomes.

Pain Management



15/18
studies show pain reduction

5.8/10
overall discomfort

Decrease use of epidural. One study examined the rate of epidural use in the hypnobirthing vs control and found use was 36% (18/50) and 53% (765/1436), respectively.

Another survey evaluated 51% (46/90) participants did not use any pain medications during labor.

Birthing Outcomes

	Studies with Hypnobirthing Benefits	Studies with no significant difference
Maternal Satisfaction	4	1
Postpartum Depression	2	1
APGAR Scores	2	1
Pregnancy symptoms	1	0
Labor Complications	0	2
Labor Duration	3	3
Labor Augmentation	1	1
Modes of Delivery	3	2

Table 1. **Birthing Outcome Summary.** *Out of 18 studies reviewed, twelve of them evaluated the effect of hypnobirthing on birthing outcomes. The table above outlines a summary of the findings across the different studies evaluating birthing outcomes.*

Psychological Effects

↑ Increased Confidence **↓ Reduced Anxiety**

A more positive childbirth experiences. 3 studies reported that women had greater satisfaction, and a more positive childbirth experience compared to the control group.

A coping mechanism. Many women were able to navigate the stress and challenges of childbirth more successfully, suggesting that self-hypnosis contributes to a more positive psychological experience.

Methodology

A comprehensive literature search was conducted using a combination of Medical Subject Headings (MeSH) and keyword search terms related to hypnosis, pregnancy, and hypnobirthing across databases including PubMed, PsycINFO, and Cochrane Library.

The review focused on randomized controlled trials published in the last 20 years that explicitly used hypnobirthing as defined by Varner (2015) as "a childbirth preparation method that combines a mixture of visualization, meditation, positive affirmations, deep breathing, and relaxation to help women achieve a calm and controlled birthing experience." Initially, 56 articles were retrieved and independently screened by four researchers.

Studies were included if they assessed the effects of hypnobirthing on pain management, birthing outcomes, or psychological effects. Articles not meeting these criteria or employing different techniques were excluded, resulting in 18 articles for the final review.

Data were synthesized to categorize studies based on whether they supported or did not support the efficacy of hypnobirthing. Additionally, basic statistical analyses were performed to compare outcomes across the studies and assess the consistency of hypnobirthing's effects.

Conclusion

Hypnobirthing appears to be a promising non-pharmacological approach to improving childbirth experiences. Possible benefits such as reduced pain intensity, lower reliance on pain medications, and enhanced maternal psychological well-being. Due to inconsistencies in study findings, further randomized controlled trials with larger sample sizes and diverse populations are needed to better understand the efficacy and optimize clinical guidelines for hypnobirthing.

Limitations

This project is limited in the amount of randomized clinical trials and other studies currently available and published. As a result the amount of data points analyzed were limited and constrained. Future studies are not only necessary to better understand the scope and impact of hypnobirthing, but also a more uniform and standard definition can facilitate the adoption and evaluation of its beneficial use.

02. Pharmacologic Pain Management for IUD Insertion: A Systematic Review and Network Meta-Analysis

Janelle R. Trefsgar OMS IV, Katrina Botto OMS III, Bansri Patel OMS IV, Afreen Hussaini OMS III, Debosree Roy PhD, Mary Ying-Fang Wang PhD, Andrew Marble MS, Rise Hatten MD

Rowan-Virtua School of Osteopathic Medicine

This systematic review and meta-analysis of 16 U.S. studies identifies paracervical lidocaine as the most effective pain management intervention for IUD insertion.

Pharmacologic Pain Management for IUD Insertion: A Systematic Review and Network Meta-Analysis

Janelle R. Trefsgar OMS IV, Katrina Botto OMS III, Bansri Patel OMS IV, Afreen Hussaini OMS III, Debosree Roy PhD, Mary Ying-Fang Wang PhD, Andrew Marble MS, Rise Hatten MD.

A.T. Still University, School of Osteopathic Medicine in Arizona ~Southern Illinois Healthcare Foundation

Background

- Intrauterine devices (IUD) are highly effective long-acting reversible contraceptives (LARC) with a minimal failure rate ranging between 0.1 to 0.8%[1], offering women greater control over their reproductive health.
- Beyond contraception, IUDs are also used for hormone regulation and have fewer side effects compared to other forms of contraception.
- However, pain upon IUD insertion has prompted much concern and created a barrier to utilization.
- American College of Obstetricians and Gynecologists (ACOG) and current literature currently do not have established guidelines for pain management interventions with IUD insertion.

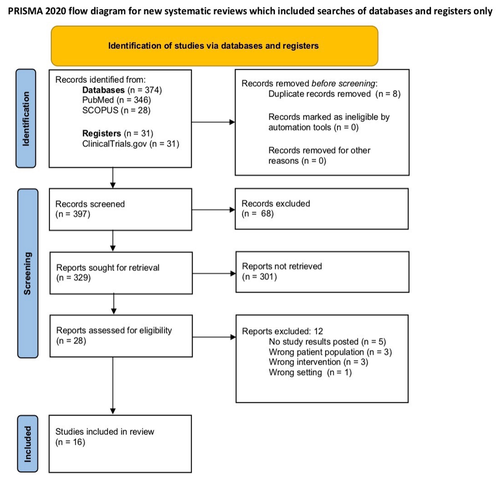
Objective

To provide an updated, comprehensive intervention discussion on IUD insertion within the United States while comparing the different pharmacological pain management strategies to both the placebo and to each intervention based on clinical trials.

- <u>Key treatments currently being used and evaluated are:</u>
  - Misoprostol
  - Paracervical 1% lidocaine blocks
  - Topical (vaginal) Lidocaine
  - NSAIDs (Naproxen and Ketorolac)
  - Inhaled Nitric Oxide
  - Nitroglycerin cream

Methods

Study Design and Inclusion Criteria: This review follows PRISMA guidelines and includes only randomized controlled trials (RCT) conducted in the U.S. that assess pain management during IUD placement in biological women aged 18 and older, utilizing a Visual Analog Scale (VAS) for pain assessment.
Literature Search Strategy: Comprehensive electronic searches were conducted across Medline, SCOPUS, and Clinicaltrials.gov using specific queries focused on pain management interventions for IUD insertion, leading to a systematic screening of relevant citations by four independent reviewers.
Data Extraction and Review Process: Data was systematically extracted into a Google Sheets spreadsheet, covering intervention details, participant demographics, and pain outcomes. Four reviewers independently performed data extraction, followed by a collaborative review to resolve discrepancies.
Outcome Definitions and Risk Assessment: The primary outcome was pain during IUD insertion, while secondary outcomes included pain at various procedural stages and provider ease of placement. Risk of bias was assessed using the JADAD scoring system by two independent reviewers.
Statistical Analysis Methodology: A network meta-analysis using a random-effect model compared pharmacological treatments, with results presented through network geometry, forest plots, and league tables. Heterogeneity and publication bias were also evaluated using appropriate statistical methods, with significance set at $p < 0.05$.



Results

Covariate		n	IUD Insertion: Regression Coefficient (95% CI)	*P* Value	Heterogeneity Explained By Covariate (%)
Mean Age		15	-0.9 (-2.8 to 1.0)	0.36	0.0%
Ratio of Caucasian Women		15	6.6 (-9.1 to 22.3)	0.41	0.0%
Ratio of African American Women		10	-18.0 (-49.0 to 13.0)	0.26	20.7%
Ratio of Hispanic Women		11	2.9 (-25.9 to 31.7)	0.84	0.0%
Ratio of Nulliparous Women		15	7.4 (-3.8 to 18.6)	0.20	15.5%
Route of Delivery		16	--	0.004*	43.6%
	Orally	4	reference	reference	--
	Vaginally	7	-8.5 (-17.3 to 0.3)	0.06	--
	Other (Intramuscular, Intrauterine, Paracervical)	5	-20.6 (-32.7 to -8.5)	0.001*	--
JADAD Score		16	4.0 (-0.9 to 8.9)	0.11	15.8%
VAS Pain Scale		16	--	0.01*	71.9%
	0-100	11	reference	reference	--
	0-10 (or 0-9)	5	-9.6 (-16.6 to -2.7)	0.01*	--

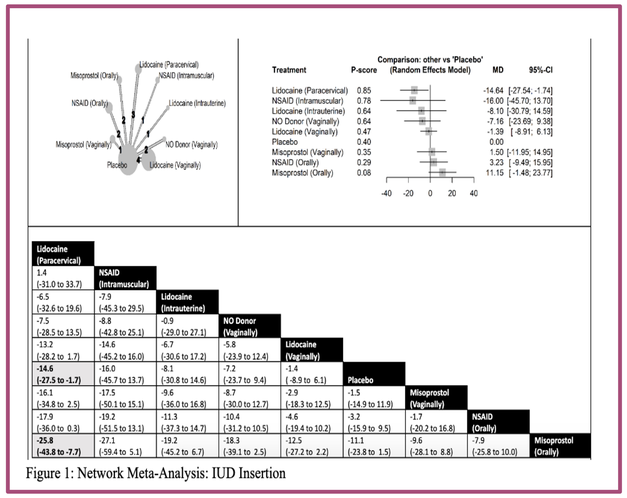


Figure 1: Network Meta-Analysis: IUD Insertion

16 trials with 1,524 women examining pain management during IUD insertion were included.
- Heterogeneity among studies was high, indicating variability in patient characteristics.

Conclusion

- Paracervical lidocaine was shown to be the most effective treatment option, significantly reducing pain compared to both placebo and other treatment options.
- Oral Misoprostol was the least effective in lowering patient VAS pain scores during IUD insertion.
- The ratio of nulliparous and African American individuals explained 20.7% and 15.5% of the heterogeneity, suggesting it's influence on pain consistently across studies.
- With our findings, we can justifiably state that providers can consider paracervical lidocaine for managing pain in their patients during IUD insertion.

Future studies

- Future studies should be directed towards larger sample sizes and should stratify the role of patient variables that affect pain to enable the development of culturally competent interventions

References

03. Human vs. AI: Can You ChatGPT Your Way Into Residency?

Audrey Jaeger, DO, MS; Kate Brendel, DO; David Jaspan, DO

Jefferson Einstein Hospital Philadelphia, PA

This study examines faculty members' ability to distinguish between AI-generated and human-written personal statements for OB-GYN residency applications, finding they were only 57% accurate in their assessments.

Human vs. AI: Can You ChatGPT Your Way Into Residency?

Audrey Jaeger, DO, MS | Kate Brendel, DO | David Jaspan, DO
Jefferson Einstein Hospital Philadelphia, PA

Background

Chat Generative Pretrained Transformer (ChatGPT) is a popular and easily accessible artificial intelligence (AI) program often used for creation of human-like text. It was released in November 2022 to the public. It has the capability to provide long format text with minimal prompting, including residency applicant personal statements. Previous studies have shown AI-generated anesthesia residency application statements are acceptable[1] and AI-generated plastic surgery statements are indistinguishable from human[2].

Objective

The purpose of this study is to determine if Ob-Gyn physician faculty were able to differentiate between ChatGPT-generated and human-generated statements. This study further analyzed 3 different AI detection softwares' abilities to detect AI-generated personal statements in comparison to human-generated statements.

Methods

- Six human statements were voluntarily submitted, each created prior to release of ChatGPT. For AI statement generation, investigators summarized the topics of the human statements to create outlines matching the content of the original statements. This outline was then fed into ChatGPT-3.5 with the instruction to generate an obstetrics and gynecology residency application personal statement. No editing was performed after AI statement generation. A total of 12 statements were included: 6 human-generated statements and 6 AI-generated equivalents.
- Two packets containing 6 randomized statements were created, each containing 3 human and 3 AI statements. Eleven faculty each reviewed one packet and were asked to determine which were ChatGPT- versus human-generated. Statement content did not cross over among the packets.
- Each statement was fed into 3 different free AI detection programs. Each program provided an overall assessment of statement originality. Two of three programs provided a more in-depth analysis including a percentage of content suspicious for AI-generation.

Results

Statement reviewers correctly determined statement origin 57% of the time. AI statements were correctly identified 52% of the time and human-generated statements were correctly identified 64% of the time.

The combined accuracy of AI detection software totaled 86%. AI detection software detected 89% of AI-generated statements and 83% of human-generated statements.

Conclusion

Physician faculty were not able to determine AI-generated statements notably more than chance (50%). Three AI detection software programs performed more accurately but also incorrectly flagged human generated statements as possible AI. This could have significant negative impacts on applicants.

It is likely residency programs will see increased reliance on AI language generators for preparation of residency applications. Programs may need to evaluate their perception of the personal statement as the primary metric of written communication ability, as well as confront the ethical question of statement originality and requirements thereof.

Percentage of Statements Correctly and Incorrectly Identified

Packet 1	qty		Packet 2	qty		Total Combined	qty	
H Correct	7	39%	H Correct	14	93%	Total H Correct	21	64%
H Incorrect	11	61%	H Incorrect	1	7%	Total H Incorrect	12	36%
AI Correct	6	33%	AI Correct	11	73%	Total AI Correct	17	52%
AI Incorrect	12	67%	AI Incorrect	4	27%	Total AI Incorrect	16	48%
Total Correct	**13/36**	**36%**	**Total Correct**	**25/30**	**83%**	**Total Combined Correct**	**38/66**	**57%**

H = Human, AI = Artificial Intelligence. This table shows the number and percentage of human and AI statements correctly and incorrectly identified by reviewing faculty. Each packet contained 6 statements. Packet 1 and 2 were reviewed by 6 and 5 faculty members respectively.

Human and AI Matched Comparisons

Statement	Creator	# Correct	% Correct	Combined Accuracy
1	Human	1/6	17%	36%
2	AI	3/5	60%	
3	Human	2/6	33%	45%
4	AI	3/5	60%	
5	Human	4/6	67%	82%
6	AI	5/5	100%	
7	Human	5/5	100%	64%
8	AI	2/6	33%	
9	Human	4/5	80%	45%
10	AI	1/6	17%	
11	Human	5/5	100%	73%
12	AI	3/6	50%	

H = Human, AI = Artificial Intelligence. This table shows the number and percentage of human and AI matched statements that were correctly identified, providing a comparison for content. Matched statements: (1,2), (3,4), (5,6), (7,8), (9,10), (11,12).

AI Detection Software

ZeroGPT AI Detector
http://www.zerogpt.com/
10/12 correct, 83%
6/6 human, 4/6 AI

CopyLeaks AI Detector
www.copyleaks.com
11/12 correct, 92%
5/6 human, 6/6 AI

GPTZero AI Detector
www.GPTZero.me
10/12 correct, 83%
4/6 human, 6/6 AI

References

1. Johnstone RE, Neely G, Sizemore DC. Artificial intelligence software can generate residency application personal statements that program directors find acceptable and difficult to distinguish from applicant compositions. J Clin Anesth. 2023 Oct;89:111185. doi: 10.1016/j.jclinane.2023.111185. Epub 2023 Jun 19. PMID: 37336139.

2. Patel V, Deleonibus A, Wells MW, Bernard SL, Schwarz GS. Distinguishing Authentic Voices in the Age of ChatGPT: Comparing AI-Generated and Applicant-Written Personal Statements for Plastic Surgery Residency Application. Ann Plast Surg. 2023 Sep 1;91(3):324-325. doi: 10.1097/SAP.0000000000003653. Erratum in: Ann Plast Surg. 2023 Nov 8. PMID: 37566815.

04. The Potential Role of Advanced Practice Providers in Minimally Invasive Gynecologic Surgery

Moses, E., Ewert, A., McManaman, A., Arruga Novoa Y Novoa, V., Shu, M.

Henry Ford Health

This retrospective chart review demonstrates how utilizing Advanced Practice Providers could lighten the burden of uncomplicated pre/post-operative appointments.

The Potential Role of Advanced Practice Providers in Minimally Invasive Gynecologic Surgery

Moses, E., Ewert, A., McManaman, A., Arruga Novoa Y Novoa, V., Shu, M.

Background

Surgical practices thrive on a streamlined system of patient care from the pre-operative evaluation to the post-operative visit. In busy referral practice for minimally invasive gynecologic surgery (MIGS), a considerable amount of time may be spent with post-operative care of patients, whether that be due to comorbid medical conditions or complications from surgery. Utilization of Advanced Practice Providers (APP's) may relieve the scheduling burden of practicing MIGS subspecialists. The objective of this study is to investigate the proportion of time spent for post-operative care of gynecologic surgical patients and explore potential solutions for women with gynecologic surgical needs to have greater access to care.

Methods

This is a retrospective chart review conducted at a university-affiliated community hospital from June 2021 to January 2024. All patients under the care of a MIGS subspecialist within an urban tertiary care network were included in this study. The primary outcome is the number of post-operative appointments. The secondary outcomes include: the average number of post-operative appointments per patient, the primary diagnosis for patients requiring more than two post-operative appointments, the average number of pre-operative appointments per patient, and the number of interim imaging studies obtained during pre-operative evaluation per patient.

Results

At our institution specific MIGS fellowship, 103.2 post-operative visits are held each year. Of these, patients on average will have 0.95 post-operative appointments. Of those patients with more than 2 post-operative appointments, the majority are due to continued surveillance, granulation tissue and vaginal bleeding. The average number of pre-operative visits per surgical consultation are 1.18 appointments. Of these, 17.7% of patients may expect to receive additional imaging, and of those, 54.1% for ultrasounds, 19.6% for computerized tomography (CT) scans, and 44.2% for magnetic resonance imaging (MRI) scans.

Tables

Table 1: Postoperative Visit Analysis

	N
Total Postoperative Visits	258 (103.2/year)
Number of Postoperative Visits per Patient	0 Visits: 81 1 Visit: 126 2 Visits: 56 >2 Visits: 4
Diagnosis for >2 postoperative appointments	A) Continued Surveillance: 75% B) Wound complication: 25% C) Comorbid Medical Condition: 0%
Number of Patients With No More Than 2 Routine Postoperative Appointments	267

Table 2: Preoperative Visit Analysis

	Number (percentage)
Number of Preoperative Visits per Patient	1.18
Number Requiring Additional Preoperative Imaging	48 Patients (17.7%) for a total of 72 images
Preoperative Imaging Obtained	A) Ultrasound: 54.1% of imaging (n=33) B) Computerized Tomography: 19.6% (n=12) C) Magnetic Resonance Imaging: 44.3% of imaging,(n=27) *Note: the sum of the above percentages >100 as some patients received more than one type of preoperative imaging*

Limitations and Future Opportunities

There are some limitations that were identified in this study. First of all, many of the MIGS surgeons in this hospital take a small amount of obstetric call, and through data analysis, we were not able to completely remove post operative visits related to obstetrics, such as cesarean sections performed while on call. Second, when analyzing the imaging, it was assumed that pelvic ultrasounds and MRIs obtained between the first and second preoperative visit were ordered in order to gain more information prior to surgery, but we cannot rule out that these were obtained by another physician for an unrelated reason.

Future opportunities for study include a financial analysis of whether or not it would be beneficial for health systems with a busy MIGS practice to hire a midlevel provider to decrease the burden of routine postoperative visits, and to review imaging prior to surgical consults to make sure that appropriate imaging was obtained.

Conclusions

The majority of patients operated on in a MIGS subspecialist practice have 1 routine post-operative care visits during their recovery course. The time necessary for 2 routine postoperative care visits equates to a new surgical consultation visit for a typical surgical consultative schedule. When averaged over the course of a year, 51 additional surgical consults may be seen that add additional access to care for women requiring surgery. Most postoperative visits were routine without complications, and this may be cared for by an experienced midlevel provider. In addition, a midlevel provider could assist in reviewing charts prior to consultation to ensure that the proper imaging has been obtained. This would not only be beneficial to the practice, but can remove barriers to care for the patient, allowing them to receive the care faster and with less appointments.

05. Comparing Shields' 2018 Category II electronic fetal monitoring (EFM) algorithm to actual management when umbilical cord arterial pH was less than 7

Daniella Silvino, DO, Katelyn Brendel, DO, Lisa A. Miller, Jay Goldberg, MD

Department of OB/GYN, Jefferson Einstein Philadelphia

This retrospective cohort study found that Shields' 2018 algorithm had a higher sensitivity for predicting severe fetal acidemia and recommending expedited delivery compared to actual clinical management.

Comparing Shields' 2018 Category II electronic fetal monitoring (EFM) algorithm to actual management when umbilical cord arterial pH was less than 7

Daniella Silvino, DO, Katelyn Brendel, DO, Lisa A Miller, Jay Goldberg, MD
Jefferson Einstein Hospital, Philadelphia

ACOOG | American College of Osteopathic Obstetricians and Gynecologists

INTRODUCTION

We previously compared Clark's EFM Category II algorithm (*AJOG* 2013) to EFM interpretation and actual management of deliveries with an umbilical cord pH less than 7 and found that while 47 percent of deliveries were expedited in actual management, only 30 percent would have been expedited by the Clark algorithm.

We proposed to similarly study the Shields Category II algorithm.

OBJECTIVES

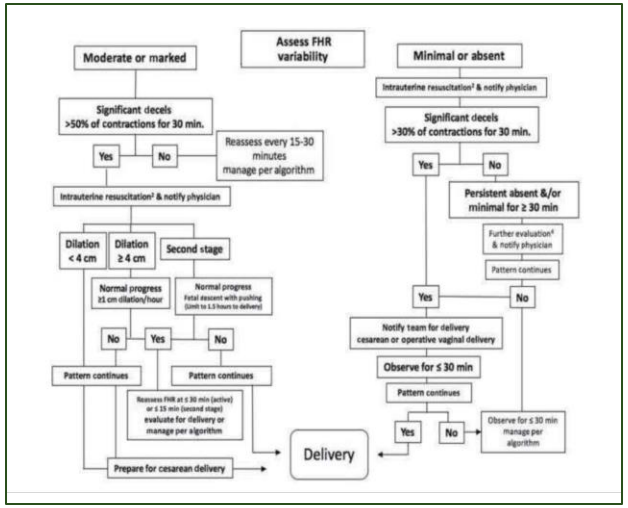
The study aimed to evaluate how the Shields Category II Algorithm compared with actual labor management practices,
and determining whether the algorithm could be a useful tool for guiding labor management.

METHODS

IRB approval was obtained. A retrospective cohort study was performed on deliveries with umbilical cord arterial pH < 7. Two groups were identified in actual management:

1. expedited delivery (urgent/emergent operative vaginal delivery or cesarean section) and
2. non-expedited delivery

We then reviewed all fetal heart tracings (FHTs) to determine if the Shields algorithm would have recommended expedited delivery or not. Data was analyzed using Chi-squared test for independence and Fisher's Exact Test.



RESULTS

30 deliveries were identified with severe fetal acidemia.

47 percent were actually delivered in expedited fashion. The Shields algorithm recommended expedited delivery in 60 percent.

Of actually expedited deliveries, the algorithm agreed with expediting delivery 92 percent of the time, 57 percent of which would have been delivered even earlier.

Of actually non-expedited deliveries, the algorithm would have expedited 25 percent of those.

CONCLUSION

The Shields 2018 Category II FHT algorithm had a higher sensitivity for predicting severe fetal acidemia (umbilical cord arterial pH less than 7) and recommending expedited delivery.

Although only 60 percent of deliveries would have had expedited delivery recommended based on the Shields algorithm, only 47 percent were delivered in expedited fashion in actual management.

KEY REFERENCES

Shields LE, Wiesner S, Klein C, Pelletreau B, Hedriana HL. A Standardized Approach for Category II Fetal Heart Rate with Significant Decelerations: Maternal and Neonatal Outcomes. *Am J Perinatol*. 2018;35(14):1405-1410.

ACOOG | American College of Osteopathic Obstetricians and Gynecologists

06. Exploring the Association Between Reproductive Health and Cognitive Function in Hispanic and Non-Hispanic White Women: Insights from a HABS-HD Study

Theresa Pham, Leigh Johnson, PhD, & the HABS-HD Study Team

University of North Texas Health Science Center

This study identifies a significant relationship between reproductive health factors and cognitive function. Notably, ethnic differences emerged, with Hispanic women exhibiting distinct cognitive trajectories compared to non-Hispanic white women.

EXPLORING THE ASSOCIATION BETWEEN REPRODUCTIVE HEALTH AND COGNITIVE FUNCTION IN HISPANIC AND NON-HISPANIC WHITE WOMEN: INSIGHTS FROM A HABS-HD STUDY

Theresa Pham[1], Leigh Johnson, PhD[2], & the HABS-HD Study Team

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[2] Institute for Translational Research, University of North Texas Health Science Center, Fort Worth, TX, USA

ABSTRACT

Purpose: Alzheimer's disease (AD) is a progressive neurodegenerative disease that leads to memory loss, cognitive deficits, and behavioral changes. Given the disproportionate effect of AD on women, it is crucial to understand the risk factors, including reproductive health variables, that may contribute to the development of dementia and AD. This study aimed to examine the association between reproductive health variables such as bilateral oophorectomy and pregnancy complications and cognitive performance in Hispanic and non-Hispanic white women.

Methods: Self-reported data from cognitively normal 309 women (165 non-Hispanic white and 144 Hispanic) enrolled in the Health and Aging Brain Study: Health Disparities (HABS-HD) project were analyzed. Reproductive health variables examined included bilateral oophorectomy, pregnancy complications, and number of pregnancies. The cognitive assessment comprised of neuropsychological test scores in five domains: memory, executive functioning, attention, language, and global cognition. Linear regression statistical analyses were conducted, with ethnicity serving as a stratification variable.

Results: Bilateral oophorectomy was linked to decreased immediate memory in Hispanic women (B=.176, SE=1.691, t=2.211, p=.029) and lower language performance in non-Hispanic white women (B=-.228, SE=1.980, t=-2.682, p=.008). Pregnancy complications were associated with poorer attention scores in Hispanic women (B=.163; SE=.000, T=2.203, p=.029). However, the number of pregnancies were not associated with cognitive performance.

Conclusions: This study and its results suggest that reproductive health variables, such as bilateral oophorectomy and pregnancy complications, were differentially associated with a decline in cognitive assessment performance among Hispanic compared to non-Hispanic women. However, a history of bilateral oophorectomy may be associated with a decline in cognitive performance in both Hispanic and non-Hispanic women.

BACKGROUND

Alzheimer's disease (AD) is the most prevalent form of dementia, accounting for 60 to 70 percent of all dementia cases and ranks as the seventh-leading cause of death. With nearly two-thirds of dementia and AD cases found in women, women aged 65 or older have an estimated lifetime risk of 1 in 5 of developing AD. While existing studies have investigated the relationships between pregnancy history, preeclampsia, and cognitive decline in postmenopausal women (Miller, K. B., Miller, V. M., & Barnes, J. N., 2019), there is a scarcity of research examining the potential differences across ethnic groups. According to the Alzheimer's Association, Hispanic individuals are about 1-1.5x more likely than non-Hispanic white individuals to have AD and other dementias, but they are only 18% more likely to be diagnosed.

METHODS

Data was collected from 309 cognitively normal women (165 non-Hispanic white and 144 Hispanic) enrolled in the Health and Aging Brain Study: Health Disparities (HABS-HD). HABS-HD is an epidemiological study of aging which seeks to understand the biological, social and environmental factors that impact cognition among diverse communities. Participants underwent an interview, cognitive assessment, blood draw, MRI, and PET scan. Linear regression statistical analyses were conducted with ethnicity serving as a stratification variable.

RESULTS

- In non-Hispanic white women, a history of bilateral oophorectomy exhibited a significant association with a decline in language performance.
- In Hispanic women, a history of bilateral oophorectomy was associated with a decline in immediate memory.
- Hispanic women who reported complications during pregnancy, delivery, or postpartum, such as hypertension, diabetes, and depression, demonstrated significant poorer attention scores.
- Advancing age and fewer years of education were found to be significant factors contributing to decreased cognitive performance, aligning with existing literature.
- No associations between executive functioning, global cognition, and delayed memory with reproductive history and health were found.
- Number of pregnancies were not significantly associated with cognitive performance.

	Non-Hispanic white women (N=165)		Hispanic women (N=144)	
	Mean (SD)	Range	Mean (SD)	Range
Age in years	70.53 (7.63)	53-90	65.03 (7.61)	51-85
Education in years	15.49 (2.40)	6-20	10.09 (4.40)	0-18
Number of pregnancies	2.26 (1.50)	0-8	3.50 (2.04)	0-13
	Percent		Percent	
History of bilateral oophorectomy	32.7		20.8	
History of pregnancy complications	30.9		24.3	

	Non-Hispanic white women		
	Immediate memory (logical memory I)	Language (F-A-S)	Attention (digit span)
History of bilateral oophorectomy	B=-.018 SE=1.612 T=-.208 p=.835	B=-.228 SE=1.980 T=-2.682 **p=.008**	B=-.018 SE=.663 T=-.209 p=.835
History of pregnancy complications	B=-.089 SE=.001 T=-1.031 p=.305	B=.006 SE=.001 T=.076 p=.939	B=.096 SE=.000 T=1.108 p=.270

	Hispanic women		
	Immediate memory (logical memory I)	Language (F-A-S)	Attention (digit span)
History of bilateral oophorectomy	B=.176 SE=1.691 T=2.211 **p=.029**	B=-.068 SE=1.933 T=-.884 p=.379	B=.091 SE=.586 T=1.199 p=.233
History of pregnancy complications	B=.083 SE=.001 T=1.067 p=.288	B=.071 SE=.001 T=.953 p=.342	B=.163 SE=.000 T=2.203 **p=.029**

DISCUSSION

This study identifies a significant relationship between reproductive health factors—such as bilateral oophorectomy and pregnancy complications—and cognitive function in cognitively normal women. Notably, ethnic differences emerged, with Hispanic women exhibiting distinct cognitive trajectories compared to non-Hispanic white women.

These findings suggest that reproductive history may influence brain health later in life, with potential variations across ethnic groups. Further research is needed to better understand these associations in diverse populations, considering biological, social, and healthcare-related factors.

Despite its strengths, this study has limitations, including sample size constraints and self-reported medical histories. As Alzheimer's disease continues to be a growing global concern, addressing gender-specific risk factors—such as reproductive history—may help shape early interventions and dementia prevention strategies tailored to women's unique cognitive risks.

Given these findings, reproductive history should be integrated into cognitive risk assessments, particularly for women undergoing surgical menopause or experiencing pregnancy complications. Healthcare providers should prioritize early cognitive screening and incorporate hormone therapy discussions as part of long-term cognitive health strategies. Personalized monitoring programs could aid in the early detection of cognitive decline and improve patient outcomes.

To reduce disparities in cognitive health, public health initiatives should focus on increasing awareness of the long-term cognitive effects of reproductive health events. Expanding access to cognitive screenings, especially in underserved communities, and promoting culturally competent care can help address ethnic disparities in cognitive aging and dementia risk. Integrating reproductive history into brain health assessments and public health strategies may ultimately enhance cognitive outcomes for women across diverse backgrounds.

ACKNOWLEDGEMENTS

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07. Navigating High-Risk Pregnancies: Interdisciplinary Strategies in Managing Lupus Nephritis During Pregnancy

Tim Habboub

Burrell College of Osteopathic Medicine, Las Cruces, NM

This case study demonstrates the successful interdisciplinary management of a high-risk pregnancy complicated by stage 4 lupus nephritis through careful medication management and multispecialty collaboration.

Navigating High-Risk Pregnancies: Interdisciplinary Strategies in Managing Lupus Nephritis During Pregnancy

Tim Habboub, supervised by Dr. Fidel Barrantes

Background & Objective

Lupus nephritis is a severe manifestation of systemic lupus erythematosus (SLE) that targets the kidneys, causing inflammation and possible renal impairment. It is categorized into stages according to the degree of kidney damage, with Stage 4 indicating substantial renal involvement. Management of lupus nephritis generally requires a regimen of immunosuppressive treatments, such as corticosteroids and drugs like mycophenolate mofetil or azathioprine, to alleviate inflammation and prevent the progression to chronic kidney diease (1).

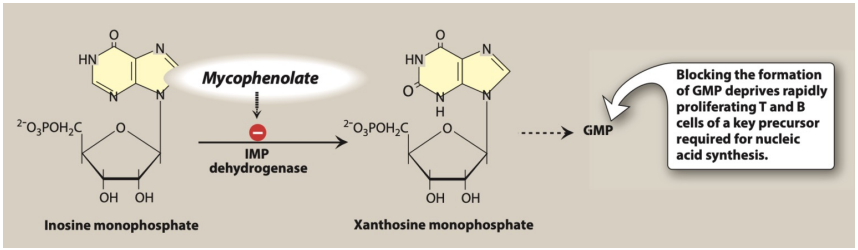

Figure 1: Mechanism of action of mycophenolate mofetil (2).

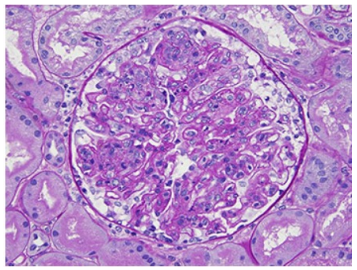

Figure 2: Kidney biopsy showing class IV LN (3).

Pregnancy in patients with lupus nephritis poses distinct challenges. The interaction between lupus and pregnancy can complicate disease management, necessitating close monitoring and adjustments to treatment. Major concerns include the risk of flare-ups, possible worsening of renal function, and the effects of immunosuppressive medications on fetal health (2).

The purpose of this study is to examine how various medical specialties collaboratively addressed the complexities of managing a high-risk pregnancy complicated by lupus nephritis.

Clinical Case & Approach

Patient diagnosed with lupus nephritis (Stages 4 and 5) and systemic lupus erythematosus (SLE) at age 24 and underwent multiple abdominal surgeries for Mirizzi's syndrome shortly after her diagnosis. Following recovery, she was initially treated with Plaquenil and steroids. Due to the progression of lupus nephritis and proteinuria, ACE inhibitors, and mycophenolate mofetil (MMF) were added to her treatment. In 2022, patient requested a switch to azathioprine and discontinuation of ACE inhibitors to attempt pregnancy.

In 2023, due to a disease flare, she resumed MMF but later transitioned back to azathioprine and amlodipine while attempting conception. By late 2023, her condition stabilized, and a surgical evaluation confirmed minimal adhesions from previous surgeries.

As of March 2024, she is pregnant with no flare-ups and has begun Benlysta injections. In June 2024, she required a cervical cerclage. In October 2024, she gave birth to a healthy baby girl.

Discussion

The successful management of this pregnancy exemplifies the importance of collaboration. Family Medicine provided care by monitoring the patient's overall well-being. Rheumatology focused on managing the lupus, ensuring disease stability. Nephrology was critical in overseeing kidney function and addressing proteinuria. Surgical intervention addressed potential adhesions from previous surgeries. Obstetrics and Gynecology managed the pregnancy and performed a cervical cerclage.

A multidisciplinary approach is essential for effective disease assessment and planning, especially for high-risk pregnancies. This model involves working closely with patients to make informed decisions, clearly communicating risks, considering fertility preservation, using contraception if needed, systematically assessing risks, managing medications step-by-step, and providing regular monitoring of both maternal and fetal health to ensure a safe and successful pregnancy (4).

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08. A Tale of Two Cesarean Hemi-Hysterectomies

Elizabeth Anne Reiner, DO, and Jaclyn Mirault, MD

UPMC Harrisburg

This rare case report describes a patient with complete uterine didelphys who underwent two separate cesarean hemi-hysterectomy procedures due to severe uterine atony during successive pregnancies.

A Tale of Two Cesarean Hemi-Hysterectomies

Elizabeth Reiner, DO PGY-3, Jaclyn Mirault MD

UPMC
LIFE CHANGING MEDICINE

INTRODUCTION

Congenital uterine anomalies (CUA) result from abnormal formation, differentiation, fusion or reabsorption of the Müllerian ducts during fetal life[1]. Complete fusion failure of bilateral Mullerian (paramesonephric) ducts between the 6th and the 11th week of gestation results in uterine didelphys[2]. Morphologically, uterine didelphys presents with two separate uterine horns or a double uterus with two separate cervices. Each uterine horn is linked to one fallopian tube and one ovary[3]. The prevalence of CUA in the general population varies from 0.06 to 38%[4]. The population prevalence of didelphys uterus is between 0.3% and 5%[5].

Most CUA are asymptomatic, but they can be associated with adverse pregnancy outcomes. Studies have shown that women with unification defects are at increased risk of preterm labor, growth restriction and fetal malpresentation[2]. There still is insufficient evidence on the efficacy and safety of surgical interventions in CUA, regarding improvement of reproductive performance.

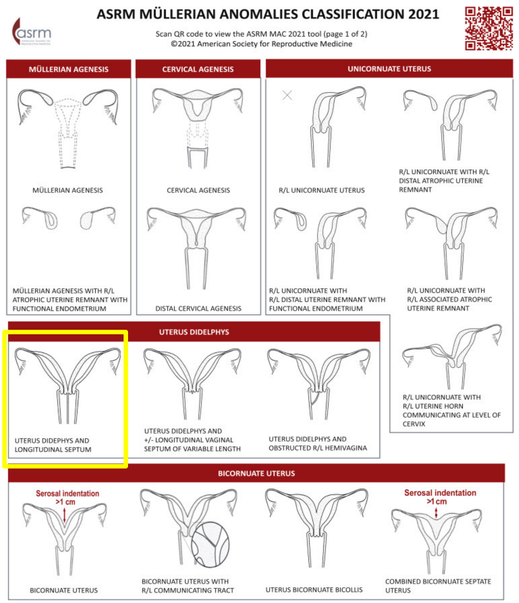

Figure 1: ASRM Mullerian Anomalies Classification 2021 Chart [6]

CASE PRESENTATION

29 y.o. G3P0212 female with a PMHx of rheumatoid arthritis, celiac disease, and depression on Prozac.

Patient presented at 7w5d for her initial prenatal appointment.

- Ultrasound confirmed a didelphys uterus with an intrauterine pregnancy in the left horn of the uterus.
- Patient was admitted to L&D at 36w3d gestation due to an intractable headache and was diagnosed with pre-eclampsia with severe features (HA).
- The patient underwent primary cesarean section during which she experienced significant uterine atony **requiring multiple medications, hysterotomy reopening, and a B lynch suture.**
- While in recovery, the patient experienced continued uterine atony with symptomatic hypotension. She was taken back to the OR and **underwent a supracervical hemi-hysterectomy of the left uterine horn.**
- Following the procedure, the patient was found to be in DIC, underwent massive transfusion protocol in the OR, and recovered in the ICU.
- The patient was discharged on post operative day #6.

Patient presented at 12w2d for her initial prenatal appointment for an IUI conception.

- Ultrasound confirmed an intrauterine pregnancy in the remaining (right) horn of the uterus.
- Pregnancy was complicated by fetal VSD, IUGR, and polyhydramnios.
- Patient underwent scheduled repeat cesarean section at 36w6d.
- The patient experienced uterine atony, **received multiple uterotonic medications, and underwent supracervical hemi- hysterectomy of the remaining uterine horn (right).**
- The patient recovered well and was discharged on post-operative day #4.

Figure 2: TVUS image of Two Cervices

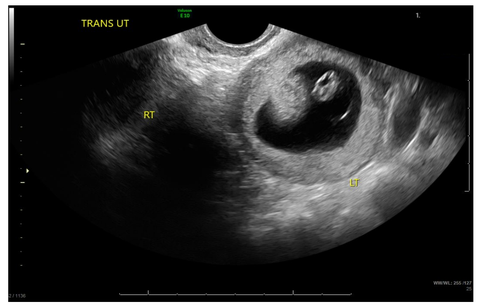

Figure 3: TVUS image of Right and Left Uterine Horn with 8w0d Fetus in Left Horn

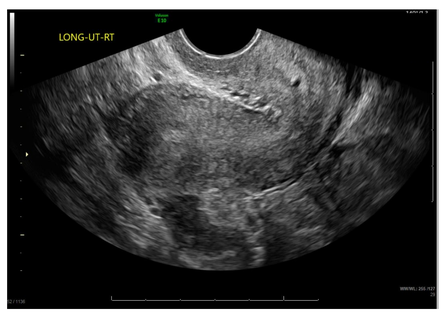

Figure 4: TVUS of Right Uterine Horn

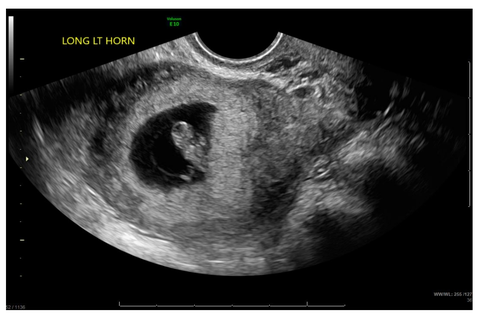

Figure 5: TVUS of Left Uterine Horn with 8w0d Fetus

DISCUSSION

Currently, there is insufficient evidence regarding the effectiveness of surgical interventions in improving reproductive outcomes for congenital uterine anomalies (CUA). The primary aim of managing CUA is to address anatomical distortions of obstructive anomalies to alleviate symptoms and prevent reproductive complications. Recent systematic reviews and meta-analyses have indicated that while uterine didelphys does not significantly increase the incidence of infertility or miscarriage, it is linked to a higher risk of preterm delivery, preterm premature rupture of membranes, fetal malpresentation, and fetal growth restriction.

Studies suggest that up to 82.3% of women with Müllerian uterine anomalies require cesarean deliveries, regardless of the clinical indication[2]. It remains uncertain whether factors such as suboptimal myometrial contractions or reduced uterine muscle mass, stemming from abnormal embryonic development, contribute to labor dystocia. In our case, our patient elected for a primary cesarean section due to worsening preeclampsia symptoms and the concern for a long induction process. Given her obstetrical history, it was recommended that she undergo a repeat cesarean section for her next delivery.

This report adds to the limited literature on pregnancies following hemihysterectomy, for which there has only been ten documented cases since 1947[1]. Most of these pregnancies resulted in live births (82%), but preterm deliveries occurred in 37% of cases[1]. Comparatively, a larger study of women with didelphys uterus showed a lower live birth rate (56%) and a higher preterm delivery rate (43%)[7]. Recent findings indicate that preterm delivery rates for didelphys uterus are significantly higher than those post-hemihysterectomy (66.7% vs. 44.4%)[1]. While our case demonstrates a successful live birth post-hemihysterectomy, the preterm delivery rate should be interpreted cautiously due to various influencing factors, including multiple pregnancies.

Each clinical situation involving uterine anomalies must be evaluated and managed individually, considering both the potential benefits and the risks of adverse outcomes. Awareness of the associated obstetric risks, particularly the heightened likelihood of preterm labor and the high rate of cesarean deliveries, is crucial for optimizing prenatal care and preparing for potential delivery complications.

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09. Factors Affecting Medical Students' Interest in Obstetrics & Gynecology

Joshua Bellisario, DO, Kimberly Huynh, MD, An Thai, BS, Trevor Pickering, PhD and Hindi E. Stohl, MD, JD

Harbor-UCLA Medical Center, Obstetrics & Gynecology, Torrance, CA

This survey of 392 osteopathic medical students revealed gender-specific factors influencing interest in OB-GYN, with all interested respondents being female and influenced by different considerations than their male counterparts.

Factors Affecting Medical Students' Interest in Obstetrics & Gynecology

Joshua Bellisario, DO[1]; Kimberly Huynh, MD[1]; An Thai, BS[2] , Trevor Pickering, PhD[3], Hindi Stohl, MD[1]

1. Harbor-UCLA Medical Center -Department of Obstetrics and Gynecology
2. Western University of Health Sciences - College of Osteopathic Medicine of the Pacific
3. University of Southern California - Department of Public Health and Biostatistics

Introduction

- From 2015 to 2024 the number of residency applications to OB-GYN have gone up 17.4%, from 1,829 to 2,148[1].
- Despite the rise in residency applications to OB-GYN in the United States, no recent studies have examined factors that influence or deter osteopathic medical students from pursuing this field.
- A small number of similar studies have been conducted in other countries, with recurring deterrents to the field being lifestyle, gender disproportions (for male students), and litigation concerns [2,3].
- The aim of this study is to investigate factors influencing American osteopathic medical students' interest in OB-GYN, with a special focus in the differences between male and female responses.

Methods

- Survey offered to 1,200 osteopathic medical students in CREOG District V during 2021-2022 academic year.
- Factors examined included but are not limited to: demographics, level of interest/disinterest in the field, hours worked, length of residency, liability, patient population, competitiveness, and female predominance. These factors were then stratified into "non-factor, minor factor, and major factor" in a student's decision.
- Respondents broken down into male and female. Only two responses listed "other" for gender, and as this was not large enough to conduct a distinct analysis, they were excluded from the study.
- A combination of Pearson's Chi Squared and Fisher's Exact Tests used to conduct analyses.

Data

Characteristic	Overall, N = 392[1]	Miss	Female, N = 242[1]	Miss	Male, N = 150[1]	p-value[2]
(For those that did not pursue Ob/Gyn) Why did you not pursue Ob/Gyn?						
Competitiveness	85 (27.2%)	62	72 (40.0%)	18	13 (9.85%)	<0.001
Disinterested: Field	191 (61.2%)	62	83 (46.1%)	18	108 (81.8%)	<0.001
Disinterested: Procedures	110 (35.3%)	62	64 (35.6%)	18	46 (34.8%)	0.9
Female Predominance	55 (17.6%)	62	8 (4.44%)	18	47 (35.6%)	<0.001
Hours Worked	0 (0%)	62	0 (0%)	18	0 (0%)	
Length of Residency	33 (10.6%)	62	23 (12.8%)	18	10 (7.58%)	0.14
Liability	115 (36.9%)	62	78 (43.3%)	18	37 (28.0%)	0.006
Lifestyle	192 (61.5%)	62	125 (69.4%)	18	67 (50.8%)	<0.001
Patient Population	75 (24.0%)	62	31 (17.2%)	18	44 (33.3%)	0.001

[1] n (%)

[2] Pearson's Chi-squared test; Fisher's exact test

Figure 1: Factors influencing decision to not pursue OB-GYN, broken down by gender.

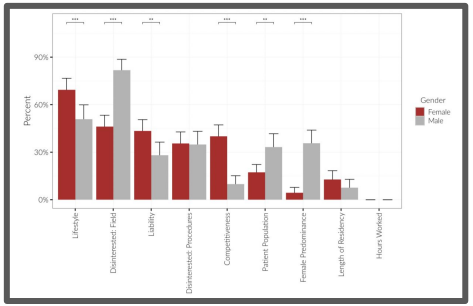

Figure 2: Graphic breakdown of factor differences between males and females.

Results

- 392 responses used in data analysis: 242 (62%) female and 150 (38%) male across 4 graduating classes.
- Those interested in OB-GYN more likely to consider prestige, patient continuity, patient population, and ability to perform procedures. Of note, those who specified interest in OB-GYN were all female respondents (n=26).
- Males more likely to cite disinterest, female predominance, and patient population as reasons for deciding against OB-GYN. Females more likely to cite competitiveness, liability, and lifestyle as reasons that would deter them from the field.

Conclusion

- Factors differ between male and female osteopathic medical students regarding a decision of whether or not to pursue a career in OB-GYN.
- Some factors more easily modifiable than others, specifically, addressing concerns over lifestyle, competitiveness, and liability.
- This study highlights the importance of accurate clinical education, adequate career counseling, and robust clinical exposures during OB/GYN rotations to provide positive experiences highlighting the breadth of the field.

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10. Excess use of Tums causing hypercalcemia and encephalopathy in pregnancy

Elizabeth Dawson, DO; Ashini Panchal, BS; Marco Goldberg, BS; Jay Goldberg, MD

Jefferson Einstein Hospital

This case report describes a rare presentation of severe hypercalcemia due to excessive Tums consumption during pregnancy, resulting in encephalopathy, acute pancreatitis, and peripartum cardiomyopathy.

Excess use of Tums causing hypercalcemia and encephalopathy in pregnancy

Elizabeth Dawson DO, Ashini Panchal, BS, Marco Goldberg, BS, Jay Goldberg MD
Jefferson Einstein Hospital Philadelphia

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LEARNING OBJECTIVES

This is a case report of a unique presentation of hypercalcemia leading to encephalopathy in pregnancy. Understanding risks with over-the-counter antacids may improve the wellbeing of patients and improve counseling.

CASE PRESENTATION

29yo G2P1 at 36w admitted for influenza A with pneumonia and dehydration.

- Admitted for symptom management
- Patient ingested “handfuls of Tums” for heartburn
- Calcium level of 14.1mg/dL (normal 8.4 - 10.2)
- Patient encouraged to discontinue Tums and discharged

Patient was re-admitted 2 days later with weakness, nausea, and altered mental status due to ongoing ingestion of “handfuls of Tums”

- Calcium 18.3 mg/dL (severe hypercalcemia)
- Cesarean section performed due to worsening symptoms and severe preeclampsia.
- Admitted to ICU postop, calcium normalized but symptoms did not improve.

MRI of the brain revealed multifocal lesions consistent with encephalopathy believed secondary to hypercalcemia.

Diagnosed with hypercalcemia alkaline syndrome, encephalopathy, and acute pancreatitis due to Tums overdose. The patient was transferred to rehab due to difficulty speaking, walking, and eating.

INTERESTING POINTS

- Milk-alkali syndrome manifests through the triad of symptoms of elevated calcium levels, metabolic alkalosis, and acute kidney injury.[1]
- Tums are a calcium salt which work by neutralizing gastric acidity, inhibiting pepsin's proteolytic activity, and increase lower esophageal sphincter tone.[2]
- Tums are pregnancy category C – only use if the benefit outweighs the risk after discussion with the patient.
- Dosing for heartburn in adults ranges from 500-1000 mg, not to exceed 7 g daily. This patient was eating “handfuls” of tums multiple times per day.

- The metabolic alkalosis that ensues from hypercalcemia can lead to CNS manifestations including coma and altered mental status.[3]

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11. Cervical Hemangioblastoma Presenting in the Late Stage of Pregnancy: A Case Report

Brittney Stevens, MS, OMS IV, Chris Callahan, CNM, Nikolas Capetanakis, DO

Western University College of Osteopathic Medicine of the Pacific

This case report details the multidisciplinary management of a rare cervical spinal cord tumor discovered at 35 weeks gestation, highlighting the coordinated approach to maternal and fetal care.

Cervical Hemangioblastoma Presenting in the Late Stage of Pregnancy: A Case Report

Brittney Stevens, MS, OMS IV, Chris Callahan, CNM, Nikolas Capetanakis, DO
Western University College of Osteopathic Medicine of the Pacific

INTRODUCTION

Hemangioblastomas: Rare, benign vascular tumors, primarily found in the cerebellum, brainstem, or spinal cord; account for about 4% of spinal cord tumors.

Pregnancy and Hemangioblastomas: Extremely rare in pregnant women, with only a few documented cases.

Tumor Growth During Pregnancy: Evidence suggests that pregnancy-related hemodynamic and hormonal changes can accelerate tumor growth and exacerbate symptoms.

Increased Blood Volume: May contribute to tumor enlargement and edema.

Hormonal Effects: Estrogen and progesterone might influence tumor growth directly or through vascular changes.

Growth Factors: Placental growth factor (PlGF) and vascular endothelial growth factor receptor-1 (VEGFR-1) might play roles in tumor progression during pregnancy.

Clinical Implications: Rapid growth of hemangioblastomas can lead to severe neurologic symptoms, requiring urgent intervention.

CASE PRESENTATION

Patient Details: 31-year-old Gravida 1 Para 0 female, 32+6 weeks estimated gestational age (EGA).

Initial Presentation: Neck pain, headaches, left-sided decreased sensation. Strength, pulses, DTRs, and blood pressure were normal. Advised to go to ED for further evaluation.

Progression: At 35+2 weeks EGA, presented with severe head and neck pain and left-sided radiculopathy; MRI revealed a spinal cord mass.

Immediate Management: Scheduled cesarean section followed by spinal cord mass resection after a one-week recovery.

Diagnosis: Pathology identified an intradural intramedullary cervical tumor, hemangioblastoma.

Postoperative Course: Status post laminectomy and tumor resection, patient had left-sided body weakness and used a walker. Postpartum depression noted, but no suicidal ideation or thoughts of self-harm.

Rehabilitation: Engaged in occupational therapy and outpatient physical therapy with some improvement in motor skills.

Follow-up Care: Ongoing postpartum follow-up, neurologist consultation for von-Hippel Lindau disease and symptom management.

CASE DISCUSSION

Timely Diagnosis and Management

Surgical and Postoperative Care

Rehabilitation and Ongoing Care

Long-Term Surveillance

C5 Hemangioblastoma – T2 Sagittal MRI

An enhancing nodule is present within the cord at the level of C5. The mass has evidence of blood products (previous hemorrhage) and vivid enhancement.

Case courtesy of Frank Gaillard, Radiopaedia.org, rID: 19509

CONCLUSION

This case underscores the importance of multidisciplinary collaboration in managing complex cases involving simultaneous obstetric and neurosurgical concerns. The successful outcome of the cesarean section followed by tumor resection illustrates the effectiveness of a well-coordinated care approach. Continuous monitoring, rehabilitation, and support are essential for optimizing recovery and addressing both the physical and psychological impacts of such a challenging situation. This case serves as a reminder of the need for vigilance in pregnant patients presenting with atypical symptoms and the benefits of a comprehensive, team-based management strategy.

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12. Understanding Factors That Influence Pain During IUD Insertion

Eve Golden, OMS III, Cecelia McWilliams, OMS IV, Kayla Johnson, OMS III, Catherine Arnold, OMS III, Andrea Done, DO, Terry Melendez, MD

Department of Research, College of Osteopathic Medicine, Rocky Vista University

This survey study found that patients experienced an average pain score of 6.65 during IUD insertion, with nulliparous individuals reporting significantly higher pain and current pain interventions providing inadequate management.

Understanding Factors That Influence Pain During IUD Insertion

Eve Golden OMS III, Cecelia McWilliams OMS IV, Kayla Johnson OMS III, Catherine Arnold OMS III, Andrea Done DO, Terry Melendez MD

Department of Research, College of Osteopathic Medicine, Rocky Vista University Southern Utah

OBJECTIVE

- Understand the patient perspective on pre-IUD counseling as compared to their experience during the procedure.
- Identify how these differences in expectations impact the patient's perception of the patient-provider relationship.
- Determine if pain during IUD placement creates a barrier for a patient's continued use of an IUD as a form of long-term birth control.
- Quantify the experience of pain during IUD insertion.

INTRODUCTION

The experience of pain during intrauterine device (IUD) insertion varies significantly among women, with some reporting minimal discomfort while others endure considerable pain[1]. Despite the common use of IUDs as a reliable form of contraception[2], a limited understanding exists regarding the underlying factors that contribute to this variance in pain perception.

This research aims to explore not only how much pain patients experienced during the IUD insertion process, but also whether they were experiencing more pain than they had expected and their likelihood to have another IUD placed. Variables that may influence pain levels during the IUD insertion process were also explored. Specifically, we investigated the roles of multiparity, the utilization of pain management offered by their provider, and the type of provider that performed the procedure.

We propose that multiparity, performance of the procedure by physicians, as well as utilization of pain medication offered will decrease the amount of perceived pain experienced by patients.
By identifying and analyzing these factors, our study seeks to enhance our understanding of pain management during IUD insertion and ultimately improve patient experiences.

METHODS

1. Survey conducted anonymously using Qualtrics.
2. The 16-question survey was distributed via a link on online platforms including Facebook, Reddit, and Instagram.
3. Participants completed an informed consent before initiating the survey.
4. Inclusion criteria included individuals over the age of 18, assigned female-sex at birth, and had the IUD inserted in the USA. Exclusion criteria included incomplete surveys.
5. Survey data from 317 participants who met the inclusion and exclusion criteria was collected and analyzed by a statistician.

RESULTS

The average pain score reported by participants was 6.65 out of 10 (Fig 1). When comparing the experienced pain to the pain that was expected based on counseling, 67.3% of participants had more pain than their provider said they would, 17.7 % experienced the same level of pain as they expected, and 17.0% had less (Fig 2). 43.8% of participants felt that based on their experience, they would have another IUD inserted (Fig 3). 30.6% were unsure if they would and 25.6% of respondents would not have another IUD inserted (Fig 3). When considering their experience 34.1% of participants were extremely likely to return to the same provider, 20.2% were somewhat likely, 19.2% were neutral, 9.46% were somewhat unlikely, and 17.4% were extremely unlikely (Fig 4). There was no significant difference found between pain scores reported by individuals who had their IUD inserted by a physician and those inserted by a non-physician provider ($p=0.076$) (Fig 5). A significant difference between the average pain scores reported between individuals who have labored and those who have not was found ($p<0.0001$) (Fig 6). The average pain score for those who reported having been in labor was 4.56 compared to an average of 7.10 for individuals who have not (Fig 6). There was no significant of [illegible] received pa[illegible])(Fig.7)

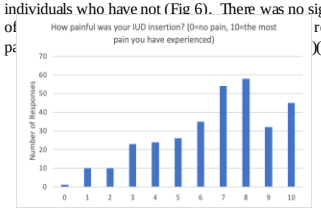

Fig 1 [illegible] 17).

Fig 2. Participants were asked to consider how the pain they experienced felt compared to

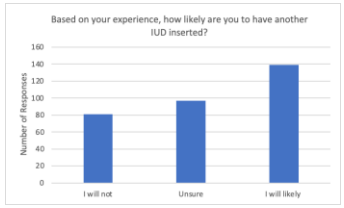

Fig 3. Participants were asked to consider how their experience impacted their likelihood to have another IUD inserted (n=317).

Fig 4. Participants were asked to consider how likely they were to return to the same provider based on their experience (n=317).

Fig 5. Comparison of pain scores in relation to the type of provider who performed the proce[illegible]

Fig 6. Comparison of pain scores of individuals who have been in labor to those who have r[illegible]

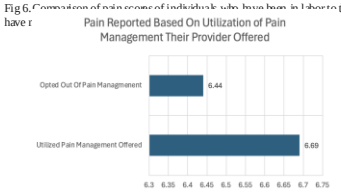

Fig 7. Comparison of pain scores for individuals who received pain intervention to individuals who did not (

Conclusion

- Current pain management strategies do not appear to be effective.
- Multiparity significantly decreased the amount of perceived pain reported.
- Utilization of offered pain management did not seem to affect perceived pain reported.
- No significant difference was found between patients who received care from physicians than from patients who received care from other providers.
- We recommend further study in the process of setting expectations and how that affects perceived pain.

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