

A Post Hoc Exploratory Analysis: Induced Abortion Complications Mistaken for Miscarriage in the Emergency Room are a Risk Factor for Hospitalization

Health Services Research and
Managerial Epidemiology
Volume 9: 1–4
© The Author(s) 2022
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/23333928221103107
journals.sagepub.com/home/hme

J. Studnicki¹ , T. Longbons¹ , D. J. Harrison², I. Skop¹, C. Cirucci¹ ,
D. C. Reardon³, C. Craver¹, J. W. Fisher¹, and M. Tsulukidze⁴

Abstract

Introduction: Previous research indicates that an increasing number of women who go to an emergency room for complications following an induced abortion are treated for a miscarriage, meaning their abortion is miscoded or concealed.

Objective: To determine if the failure to identify a prior induced abortion during an ER visit is a risk factor for higher rates of subsequent hospitalization.

Methods: Post hoc analysis of hospital admissions following an induced abortion and ER visit within 30 days: 4273 following surgical abortion and 408 following chemical abortion; abortion not miscoded versus miscoded or concealed at prior ER visit.

Results: Chemical abortion patients whose abortions are misclassified as miscarriages during an ER visit subsequently experience on average 3.2 hospital admissions within 30 days. 86% of the patients ultimately have surgical removal of retained products of conception (RPOC). Chemical abortions are more likely than surgical abortions (OR 1.80, CL 1.38-2.35) to result in an RPOC admission, and chemical abortions concealed are more likely to result (OR 2.18, CL 1.65-2.88) in a subsequent RPOC admission than abortions without miscoding. Surgical abortions miscoded/concealed are similarly twice as likely to result in hospital admission than those without miscoding.

Conclusion: Patient concealment and/or physician failure to identify a prior abortion during an ER visit is a significant risk factor for a subsequent hospital admission. Patients and ER personnel should be made aware of this risk.

Keywords

induced abortion, medical abortion, emergency room, inpatient admission, retained products of conception, medicaid

Introduction

In a previous study, we found abortion-related emergency room (ER) treatment rates from 2002–2015 increased 315% and 507% following surgical and chemical abortions respectively.¹ During this same period, we also found an increasing number of abortion patients misclassified/miscoded as having post miscarriage complications. A contributory factor to these miscodings may be the advice given to women by some abortion providers to conceal their abortion when seeking care in the ER for adverse events.^{2,3} Since 60.9% of abortion-related ER visits following a chemical abortion were being miscoded as miscarriage by 2015, there is concern that this misinformation (ie, miscarriage rather than induced abortion) might result in sub-optimal

care and, subsequently, an increased likelihood of hospital admission.¹ We use the risk of hospitalization following one

¹ Charlotte Lozier Institute, Arlington, VA, USA

² American Association of Pro-Life Obstetricians and Gynecologists, Eau Claire, MI, USA

³ Elliot Institute, Springfield, IL, USA

⁴ Florida Gulf Coast University, Fort Myers, FL, USA

Submitted April 20, 2022. Revised May 4, 2022. Accepted May 6, 2022.

Corresponding Author:

J. Studnicki, Charlotte Lozier Institute, 2800 Shirlington Rd., Ste. 1200, Arlington, VA 22206, USA.

Email: jstudnicki@lozierinstitute.org



or more ER treatments as a proxy for misinformed and sub-optimal post abortion care.

Methods

Data were obtained from the enrollee-level Medicaid Analytic eXtract files licensed through the Centers for Medicare and Medicaid Services (CMS) Chronic Conditions Data Warehouse. The analytic dataset is comprised of enrollees from the 17 states whose official policies applied state funds to abortions not covered by federal Medicaid during the period 1999–2015. The study population was made up of enrollees over 13 years of age with at least one identifiable pregnancy outcome. For each beneficiary, all unique pregnancy outcomes were identified using International Classification of Diseases, Ninth Revision (ICD-9) codes. Additionally, Current Procedure Terminology, Fourth Edition (CPT4) and Healthcare Common Procedure Coding System (HCPCS) codes were used to confirm pregnancy outcomes. Every emergency room visit occurring within 30 days of the index abortion was identified (Place of Service code 23—emergency room). Emergency room visits within 30 days of a surgical or chemical induced abortion but treated for spontaneous abortion or miscarriage (ICD-9, primary diagnosis 634) are considered miscoded and possible concealment by the patient. Hospital admissions considered for the purpose of surgical removal of retained products of conception (RPOC) comprise ICD-9 procedure codes 690, 694, and 695.

In the original study, between 1999–2015, there were 423 000 confirmed induced abortion Medicaid procedures (361 924 surgical and 61 076 chemical), followed by 121 283 ER visits (99 928 surgical and 21 355 chemical). The exploratory post hoc analysis identified 4273 hospital admissions within 30 days of a surgical abortion and following an ER visit and 408 hospital admissions within 30 days of a chemical abortion and following an ER visit.

Summary analytic tables were created using (SAS/STAT) software, version (10) of the SAS system for (Unix). Copyright (2019) SAS Institute Inc.

The study has been exempted from Institutional Review Board (IRB) review pursuant to the U.S. Department of Health and Human Services Policy for Protection of Human Research Subjects at C.F.R. 46.101(b). See IRB ID: 7269, www.sterlingirb.com.

Results

Women experiencing chemical abortion and a subsequent emergency room (ER) visit within 30 days were less likely (OR 0.81, CL 0.70-0.95) to be hospitalized for any reason in that same time period than women who had experienced surgical abortion. This is true both for women whose prior abortion was concealed by miscoding during the ER visit and those for whom no mistaken miscarriage coding occurred (Table 1). Abortions miscoded in the ER were more likely to result in hospitalization for any reason (OR 1.06, CL 0.87-1.28) than those not miscoded. However, the subset of chemical abortion patients whose abortion was miscoded as miscarriage did exhibit a striking pattern of multiple admissions (3.2 per patient) for those women who were subsequently admitted compared to 1.8 admissions per woman whose abortion was not miscoded. Thus, the number of admissions per patient was 78% higher in women whose chemical abortion was concealed.

Further analysis determined that admissions for surgical RPOC were experienced by 86.3% of the women whose chemical abortion was subsequently miscoded in the ER, 2.5 times the rate of surgical abortion patients (34.2%) whose abortion was similarly miscoded. A very strong contrarian pattern emerges for hospital admissions involving surgical RPOC by aspiration and curettage or dilation and curettage. Chemical abortions are significantly more likely (OR 1.80, CL 1.38-2.35) than surgical abortions to result in an RPOC admission and chemical abortions miscoded in the ER are more likely (OR 2.18, CL 1.65-2.88) than abortions without miscoding to have a subsequent RPOC admission.

Chemical abortion patients whose subsequent ER visit is mistakenly coded as an adverse event related to miscarriage experience multiple hospital admissions within 30 days of the

Table 1. Hospital Admissions (for any Reason and RPOC) Following an Abortion and an Emergency Room Visit: by Type of Abortion with and without Miscoding as a Miscarriage.

Abortion miscoded as miscarriage (ICD 634)	Surgical abortion			Chemical abortion		
	Yes (%)	No (%)	Total	Yes (%)	No (%)	Total
No. patients with ER visits	567 (3.3)	16 671 (96.7)	17 238	366 (11.2)	2912 (88.8)	3278
No. ER patients admitted for any reason	114 (5.9)	1823 (94.1)	1937	22 (10.4)	190 (89.6)	212
% ER patients admitted for any reason	20.1%	10.9%	11.2%	6.0%	6.5%	6.4%
Total no. admissions for any reason	232 (5.4)	4041 (94.6)	4273	71 (17.4)	337 (82.6)	408
Admissions per patient for any reason	2.0	2.2	2.2	3.2	1.8	1.9
No. patients admitted for surgical RPOC	39 (13.0)	262 (87.0)	301	19 (21.6)	69 (78.4)	88
% admitted patients requiring surgical RPOC	34.2%	14.4%	15.5%	86.4%	36.3%	41.5%
No. surgical RPOC admissions	42 (13.3)	274 (86.7)	316	22 (23.7)	71 (76.3)	93
% surgical RPOC admissions of total admissions	18.1%	6.8%	7.4%	31.0%	21.1%	22.8%
Surgical RPOC admissions per patient	1.1	1.0	1.0	1.2	1.0	1.1

abortion and are particularly at risk to experience a hospitalization that involves RPOC.

Discussion

Our research indicates that an ER physician's misclassification of a failed induced abortion as a miscarriage correlated with higher rates of hospitalization and surgical intervention for RPOC. A patient's concealment of a chemical abortion, and/or the ER staffs' failure to identify the failed abortion attempt, are risk factors for multiple hospital admissions and delayed provision of necessary surgical treatment, compared with care for those whose abortion is not miscoded.

One possible explanation is that ER physicians may tolerate a higher level of pain, tenderness, or bleeding if they know they are dealing with an induced abortion patient rather than a spontaneous abortion patient experiencing the same symptoms. It may be that these women were considered sick enough to be admitted, yet surgical care was delayed while alternative treatment options were explored. The percent of admitted women who underwent surgical intervention for RPOC is strikingly higher for women whose induced abortions were misclassified as miscarriages.

It is important for emergency room personnel to obtain an accurate history when faced with an incomplete induced abortion. Additionally, it is inadvisable for abortion providers to tell women that if they present to an ER after the abortion, they can simply say they are having a miscarriage.^{2,3}

Abortion providers should advise women that they may be at increased risk of multiple hospitalizations and surgical intervention if they do not inform medical personnel that they are experiencing an abortion complication. As required by the mifepristone Risk Evaluation and Mitigation Strategy, patients should be strongly reminded to bring the Medication Guide when seeking medical care in an emergency room.⁴ Further research on adverse events associated with miscoding of induced abortion is warranted.


Declaration of Conflicting Interests


The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.


Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the Charlotte Lozier Institute.

ORCID iDs

J. Studnicki  <https://orcid.org/0000-0003-2958-7493>

T. Longbons  <https://orcid.org/0000-0003-0479-9166>

C. Cirucci  <https://orcid.org/0000-0002-4681-6529>

References

1. Studnicki J, Harrison DJ, Longbons T, et al. A longitudinal cohort study of emergency room utilization following mifepristone chemical and surgical abortions, 1999–2015. *Health Serv Res Manag Epidemiol.* 2021;8. doi:10.1177/23333928211053965
2. Safe2Choose. Will medical staff be able to notice that I am having an abortion? Accessed September 9, 2021. <https://safe2choose.org/faq/medical-abortion-faq/during-abortion-with-pills/will-medical-staff-be-able-to-notice-that-i-am-having-an-abortion>
3. Plan C. Abortion pills FAQ: Can I get in trouble for using abortion pills? Accessed September 9, 2021. <https://www.plancpills.org/guide-how-to-get-abortion-pills#faq>, Google Scholar.
4. Food and Drug Administration. Risk Evaluation and Mitigation Strategy (REMS) Single Shared System for Mifepristone 200 mg. Published April 2019. Updated May 2021. https://www.accessdata.fda.gov/drugsatfda_docs/rems/Mifepristone_2021_05_14_REMS_Full.pdf

Author Biographies

J. Studnicki is currently Vice President and Director of Data Analytics at the Charlotte Lozier Institute in Arlington, Virginia. Over a span of four decades, he held academic appointments at the Johns Hopkins University School of Hygiene and Public Health, the University of South Florida College of Public Health, and the University of North Carolina, Charlotte, where for ten years he served as the Irwin Belk Endowed Chair in Health Services Research. Dr. Studnicki holds Doctor of Science (ScD) and Master of Public Health (MPH) degrees from Johns Hopkins and a Master of Business Administration (MBA) from the George Washington University.

T. Longbons is a research associate with the Charlotte Lozier Institute. Her research focuses on abortion statistics at the state and national levels and the changing landscape of abortion policy, provision, and access in the United States. She received her B.A. from Thomas Edison State University.

D. J. Harrison, MD received her MD from the University of Michigan and completed her OBGYN residency at a University of Michigan affiliate hospital (St. Joseph Mercy Hospital). She is a diplomate of the American Board of Obstetrics and Gynecology. She is currently CEO of the American Association of Pro-Life Obstetricians and Gynecologists.

I. Skop, M.D., F.A.C.O.G. is Senior Fellow and Director of Medical Affairs for the Charlotte Lozier Institute. Prior to joining CLI, she served for over 25 years in private practice as an obstetrician-gynecologist in San Antonio. Dr. Skop received her Bachelor of Science in physiology from Oklahoma State University and her medical doctorate from Washington University School of Medicine. She completed her residency in obstetrics and gynecology at the University of Texas Health Science Center at San Antonio. Dr. Skop is a Fellow of the American College of Obstetricians and Gynecologists and is a lifetime member of the American Association of Pro-Life Obstetricians and Gynecologists.

C. Cirucci, MD received her Bachelor of Science in Mechanical Engineering from Virginia Tech in Blacksburg, VA and her MD from Thomas Jefferson University, Philadelphia, PA. She completed her residency in obstetrics and gynecology at the Medical College of Virginia in Richmond, VA. She is a diplomate of the American Board of Obstetrics and Gynecology and a life Fellow of the American College of Obstetricians and Gynecologists. She is a member of the Christian Medical and Dental Associations, the North American

Menopause Society, the Pennsylvania Medical Society, and the Allegheny County Medical Society. She is a board member of the American Association of Pro-Life Obstetricians and Gynecologists. She worked in private practice for twenty years in Pittsburgh, PA.

D. C. Reardon is the director of Elliot Institute, a biomedical ethicist, and a lead author on numerous studies and books examining the risk factors and effects of pregnancy loss on women and families.

C. Craver is an independent health services researcher affiliated with the Charlotte Lozier Institute focused on the use of secondary health-care data sources in population based scientific research. He is widely published in many healthcare topics including cancer treatment, rare disease populations, and the efficacy of surgical services.

J. W. Fisher is currently an Associate Scholar at the Charlotte Lozier Institute. Following a 22-year career as a nuclear submarine officer, he served as the Director of Life Support and engineering at the Florida Aquarium, Chief Financial Officer of Technology Transfer Services, and 10 years as an Assistant Professor at the University of North Carolina at Charlotte College of Health and Human Services. Dr. Fisher

holds a PhD in Information Systems and Decision Sciences from the University of South Florida, a JD from Massachusetts School of Law, and master's degrees from the Massachusetts Institute of Technology (Ocean Engineering), University of Notre Dame (Administration), Indiana University (Business Administration), and the United States Naval War College (National Security Policy). He is currently a member of the bar in New Hampshire and Massachusetts.

M. Tsulukidze, MD, PhD, MPH is an Assistant Professor at the Florida Gulf Coast University, Marieb College of Health & Human Services. Before joining FGCU, Dr. Tsulukidze was a Postdoctoral Fellow at the Dartmouth Center for Health Care Delivery Science. She has earned a Ph.D. degree from the University of North Carolina at Charlotte and MD from Tbilisi Medical Academy. Previously Dr. Tsulukidze was a UNICEF National Consultant to the Parliament of Georgia, Short-Term Consultant at PAHO/WHO and Senior Expert at the Parliament of Georgia, Committee on Health and Social Issues. She has also worked as a Deputy Chair/Project Manager for the Task Force for Prevention of Micronutrient Malnutrition and Food Fortification Initiatives established under the Parliament of Georgia, Committee on.