merican Journal of EpidemiologyVolume 187, Issue 10, 1 October 2018, Pages 2073-2079

Physical Exertion Immediately Prior to Placental Abruption: A Case-Crossover Study(Article)

- Chahal, H.S.[a,b]Email Author,
- Gelaye, B.[a],
- Mostofsky, E.[a,c],
- Sanchez, S.E.[d,e],
- Mittleman, M.A.[a,c],
- MacLure, M.[f],
- Pacora, P.[g],
- Torres, J.A.[g,h],
- Romero, R.[i,j,k,l],
- Ananth, C.V.[m,n],
- Williams, M.A.[a]
- View Correspondence (jump link)
- [a]Department of Epidemiology, Harvard T.H. Chan School of Public Health, Kresge 500, 677 Huntington Avenue, Boston, MA 02115, United States
- [b]Mississauga Academy of Medicine, University of Toronto Mississauga, Mississauga, Canada
- [c]Cardiovascular Epidemiology Research Unit, Beth Israel Deaconess Medical Center, Boston, MA, United States

View additional affiliations

Abstract View references (34)

While there is consistent evidence that episodes of physical exertion are associated with an immediately higher risk of acute ischemic vascular events, the risk of placental abruption immediately following episodes of physical exertion has not been studied. In a multicenter case-crossover study, we interviewed 663 women with placental abruption at 7 Peruvian hospitals between January 2013 and August 2015. We asked women about physical exertion in the hour before symptom onset and compared this with their frequency of physical exertion over the prior week. Compared with times with light or no exertion, the risk of placental abruption was 7.8 (95% confidence interval (CI): 5.5, 11.0) times greater in the hour following moderate or heavy physical exertion. The instantaneous incidence rate ratio of placental abruption within an hour of moderate or heavy physical exertion was lower for women who habitually engaged in moderate or heavy physical activity more than 3 times per week in the year before pregnancy (rate ratio (RR) = 3.0, 95% CI: 1.6, 5.9) compared with more sedentary women (RR = 17.3, 95% CI: 11.3, 26.7; P for homogeneity < 0.001), and the rate ratio was higher among women with preeclampsia/eclampsia (RR = 13.6, 95% CI: 7.0, 26.2) than among women without (RR = 6.7, 95% CI: 4.4, 10.0; P for homogeneity = 0.07). © Published by

SciVal Topic Prominence

Topic: Abruptio Placentae | Pregnancy | placental abruption
Prominence percentile: 63.697

Author keywords

abruptio placentaecase-crossoverexercisephysical exertionplacental abruption

Indexed keywords

GEOBASE Subject Index:	comparative studyconfidence intervalhealth riskhomogeneityhospital sectorph activitypregnancyquestionnaire surveywomens health
EMTREE medical terms:	adultArticlecomorbidityeclampsiafemalehumanmajor clinical studyPeruphysi placentaeyoung adult
Regional Index:	Peru

Funding details

Funding sponsor	Func
University of Toronto	
Eunice Kennedy Shriver National Institute of Child Health and Human Development See opportunities by NICHD	
National Institutes of Health See opportunities by NIH	
Harvard Forest, Harvard University See opportunities by HF	
Michigan State University	
Wayne State University	
Beth Israel Deaconess Medical Center See opportunities by BIDMC	
Columbia University	
University of Michigan	
National Institute of Child Health and Human Development	HHS
Eunice Kennedy Shriver National Institute of Child Health and Human Development See opportunities by NICHD	
National Institutes of Health See opportunities by NIH	R01
National Institutes of Health See opportunities by NIH	T37

- Funding text #1

Author affiliations: Department of Epidemiology, Harvard T.H. Chan School of Public Health, Boston, Massachusetts (Harpreet S. Chahal, Bizu Gelaye, Elizabeth Mostofsky, Murray A. Mittleman, Michelle A. Williams); Mississauga Academy of Medicine, University of Toronto Mississauga, Mississauga, Canada (Harpreet S. Chahal); Cardiovascular Epidemiology Research Unit, Beth Israel Deaconess Medical Center, Boston, Massachusetts (Elizabeth Mostofsky, Murray A. Mittleman); Universidad Peruana de Ciencias Aplicadas, Lima, Peru (Sixto E. Sanchez); Asociación Civil Proyectos en Salud , Lima, Peru (Sixto E. Sanchez); Department of Anesthesiology, Pharmacology and Therapeutics, Faculty of Medicine, University of British Columbia, Vancouver, Canada (Malcolm Maclure); Department of Obstetrics and Gynecology, San Marcos University, Hospital Madre-Nino San Bartolome, Lima, Peru (Percy Pacora, Jose A. Torres); Department of Obstetrics and Gynecology, San Marcos University, Hospital Nacional Hipólito Una...View All

- Funding text #2

This work was funded by the National Institutes of Health (grants R01 HD059827 and T37 MD001449). This research was supported, in part, by the Perinatology Research Branch, Division of Obstetrics and Maternal-Fetal Medicine, Division of Intramural Research, Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, US Department of Health and Human Services, and, in part, with Federal funds from the National Institute of Child Health and Human Development, National Institutes of Health, US Department of Health and Human Services, under contract HHSN275201300006C. R.R. has contributed to this work as part of his official duties as an employee of the US Federal Government.

- Funding text #3

We thank the participating hospitals. We also thank Elena Sanchez and the dedicated staff members of Asociacion Civil Proyectos en Salud (PROESA), Peru, for their expert technical assistance with this research. Conflict of interest: none declared.

- **ISSN:** 00029262
- **CODEN:** AJEPA
- **Source Type:** Journal
- **Original language:** English

- **DOI:** 10.1093/aje/kwy138
- **PubMed ID:** 29992226
- **Document Type:** Article
- **Publisher:** Oxford University Press