

# Prophylactic internal iliac artery balloon occlusion for management of placenta Accreta



**Jocelynn King**



**Mahmood Kabeil**



Office of International Affairs  
University of Colorado  
Denver | Anschutz Medical Campus

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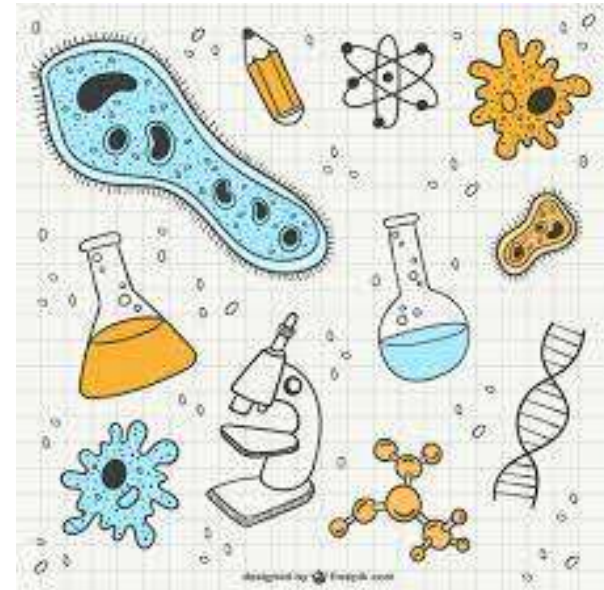
# Prophylactic internal iliac artery balloon occlusion for management of placenta Accreta

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Mentor: Dr. Mahmood Kabeil

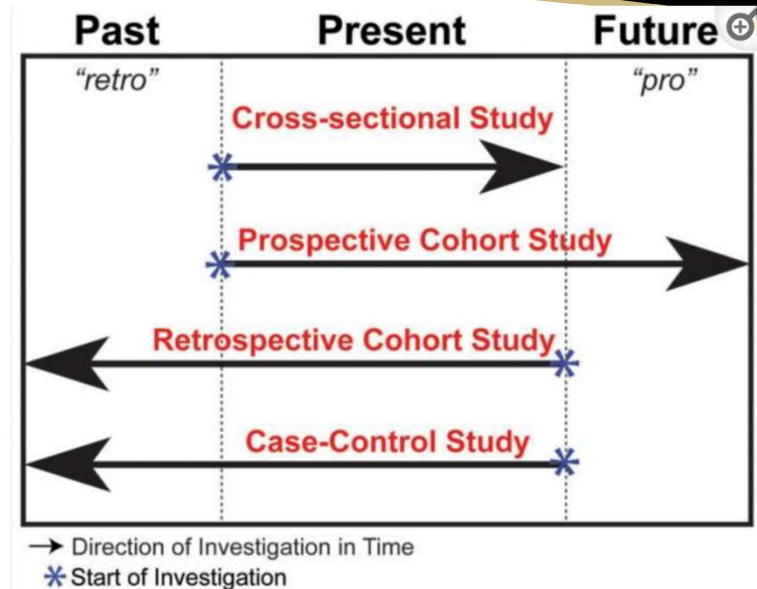
# About Me

- Biology major at CU Denver
- Pre-med
- Interest in ISCORE comes from my family history. I have immigrant grandparents and have always been interested in the challenges faced by immigrants when moving to the US



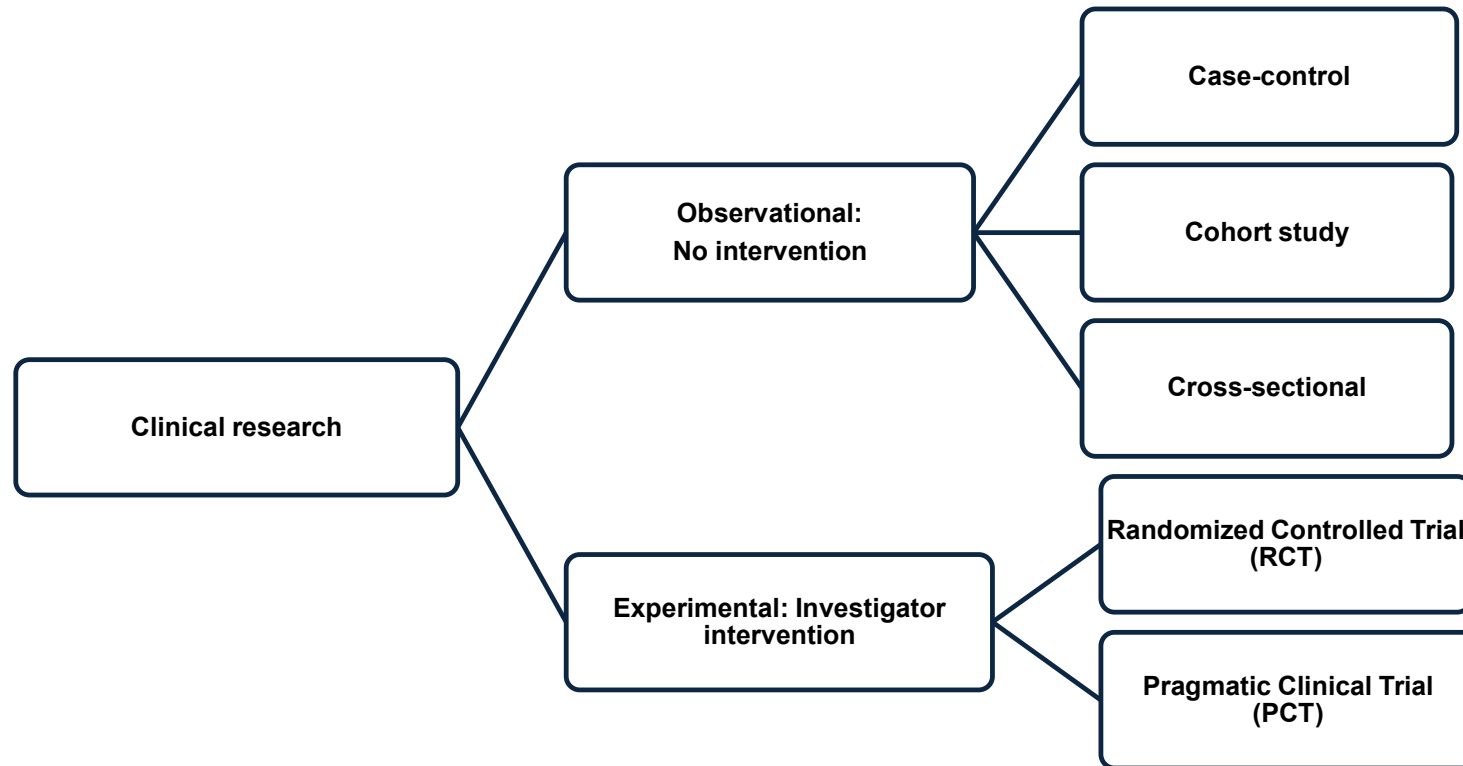
# Types of Epidemiological Research

- Experimental studies
  - Randomized controlled trials
  - Field or community trials
- Observational studies
  - Case-control: patients are grouped by initial status, and their histories are evaluated to determine possible trends related to disease outcome
  - Cohort studies: patients are recruited to the study and evaluated over a period of time
  - Cross-sectional: collect data at one specific point in time



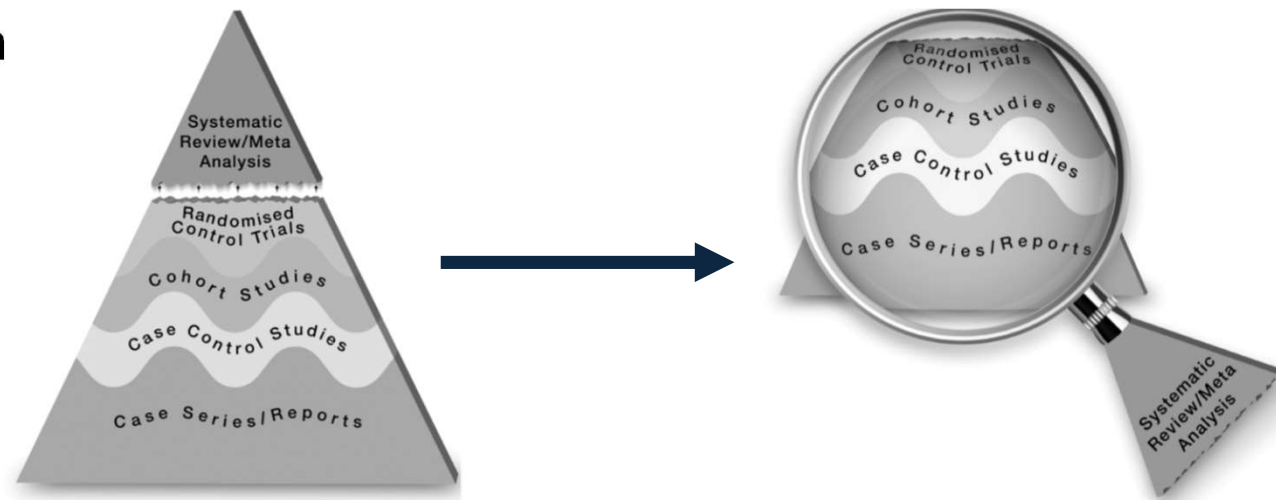
Song, Jae W. M.D.; Chung, Kevin C. M.D., M.S.. Observational Studies: Cohort and Case-Control Studies. Plastic and Reconstructive Surgery 126(6):p 2234-2242, December 2010. | DOI: 10.1097/PRS.0b013e3181f44abc

# Clinical Research Design



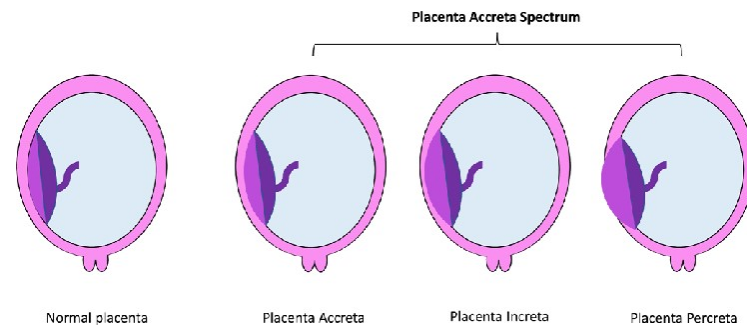
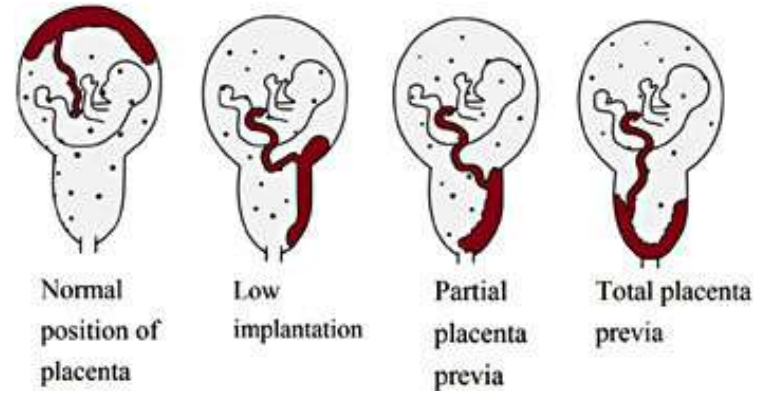
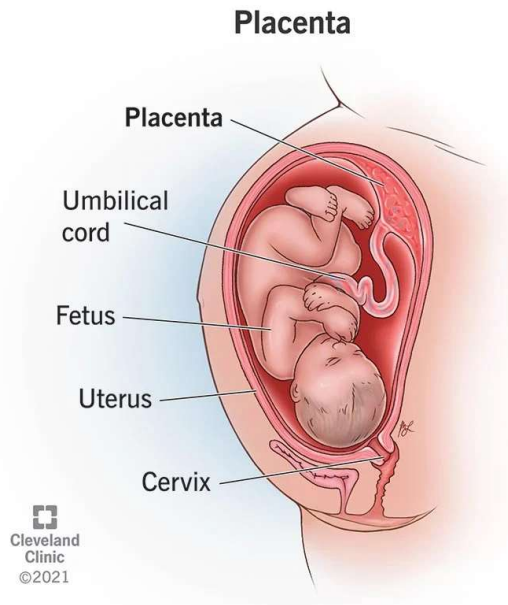
# Hierarchy of Evidence

- Hierarchy of validity: risk of bias
- Systematic reviews are "lenses" to analyze evidence through



Alper BS, Haynes RB  
EBHC pyramid 5.0 for accessing preappraised evidence and guidance  
*BMJ Evidence-Based Medicine* 2016;21:123-125.

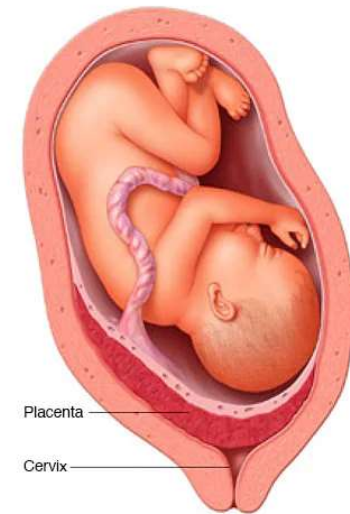
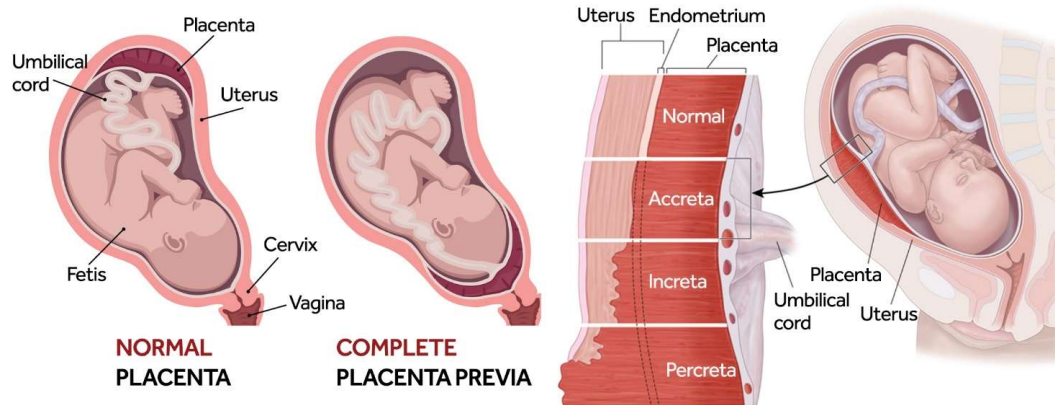
# Normal Placenta Implantation





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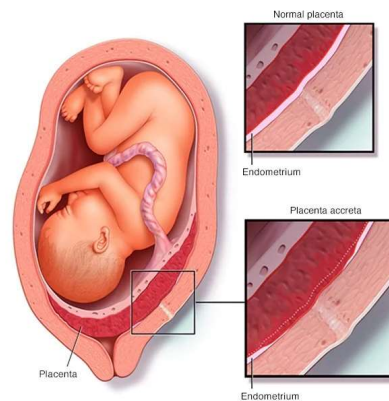
# Abnormal Placenta Implantation



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## Placenta accreta:

**Placenta accreta occurs when the placenta grows too deeply into the uterine wall during pregnancy. Scarring in the uterus from a prior C-section or other uterine surgery may play a role in developing this condition**



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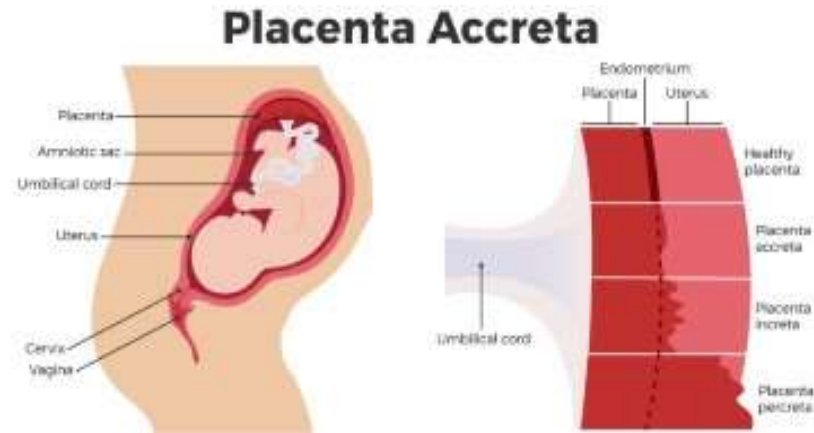
## Placenta previa:

**is a problem during pregnancy when the placenta completely or partially covers the opening of the uterus (cervix).**



# Placenta Accreta

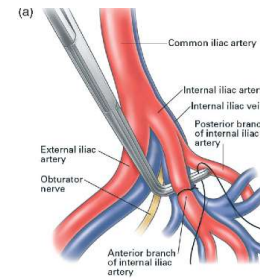
- Risk factors:
  - Older maternal age
  - Previous c-sections
  - Placenta previa
- Complications:
  - Blood loss
  - Hemorrhage
  - Intravascular coagulation
  - Fetal mortality





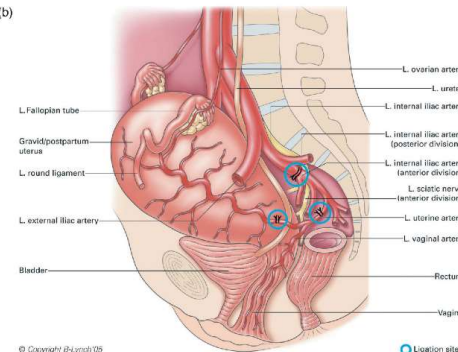
# Management of Placenta Accreta

- Most common treatment is postpartum **hysterectomy**
- Methods for decreasing blood loss and to preserve uterus:
  - **Ligation** of internal iliac artery
  - Prophylactic **balloon** occlusion



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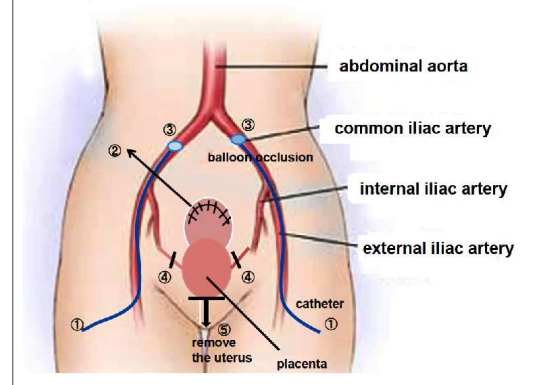
(b)



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Ligation sites

**Figure 1:** Anatomy in the Pelvis and Cesarean Hysterectomy Procedure. For more information, see the Text of this.



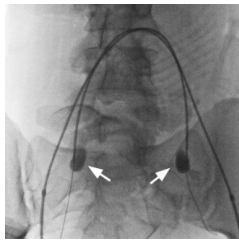
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## Surgical Technique

Sheaths were inserted through the bilateral femoral arteries. Catheters were threaded through the sheath and placed an inflatable occlusion balloon in the internal iliac artery directly after the bifurcation. Saline solution was pumped into the balloons to inflate them immediately after the fetus was delivered, and the balloons were deflated immediately after skin closure at the conclusion of the hysterectomy.



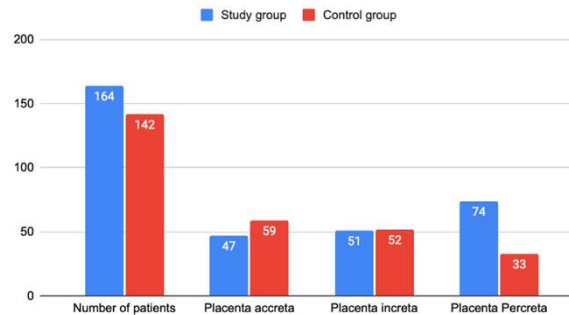
Riedl et al. 2017

## Methods

- Descriptive analysis of ten papers
- Four retrospective case reviews, four case studies, one cohort study, and one case-control study
- Collected data related to maternal and gestational age, risk factors, blood loss, and complications

## Results

Patient Diagnoses



	Study group	Control group
Mean blood loss (mL)	800-2800	1170-4435
Mean transfusion volume (units)	0-6.5	4.5-7.5
Average length of hospitalization (days)	4.4-10.2	4.9-10.8
Average length of ICU stay (days)	1.7-2.5	1.4-1.6
Percent of patients experiencing complications	23.20%	16.90%

## Findings

- For all studies, mean blood loss was either lower or not statistically significantly different in the study group compared to the control group
- Average length of hospitalization was very similar between the two groups, but the control group had shorter ICU stays on average
- Radiation exposure is a main concern with this treatment, but fluoroscopy duration averaged only 2 - 7.4 minutes
- Slightly higher rate of complications occurred for the study group

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# Cultural Learning

- Gained a new appreciation for people, especially professionals, who move to a new country
- Learned about different ways of life in other countries
  - Food, daily schedule, customs
- Differences in medicine between the US and other countries





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**Thank You!**