

Covariate analysis query: Hospital surgical volume-outcome relationship in caesarean hysterectomy for placenta accreta spectrum

Oguljema Redjepova¹, Jack Lowe-Zinola¹, and Christopher Griffin²

¹Sandwell and West Birmingham Hospitals NHS Trust

²Notre Dame Medical School

December 1, 2021

Covariate analysis query: Hospital surgical volume-outcome relationship in caesarean hysterectomy for placenta accreta spectrum

Oguljema Redjepova^a, Jack Lowe-Zinola^b, Christopher Griffin^c

^a *City Hospital Birmingham, Sandwell and West Birmingham Hospitals NHS Trust, Dudley Road, Birmingham, United Kingdom*

^b *Good Hope Hospital, University Hospitals Birmingham NHS Trust, Rectory Road, Sutton Coldfield, United Kingdom*

^c *Department of Obstetrics and Gynaecology, Notre Dame Medical School, Fremantle, Western Australia 6160*

Corresponding author:

Jack Lowe-Zinola

Email: jack.lowe-zinola@nhs.net

Professional address: Good Hope Hospital, Rectory Road, Sutton Coldfield B75 7RR

Telephone: 0121 424 2000

Dear Sirs,

It was with great interest and intrigue that we discussed the thought provoking article presented by K Matsuo et al, 'Hospital surgical volume-outcome relationship in caesarean hysterectomy for placenta accreta spectrum'.

We wish to congratulate the authors on this valuable piece of research, which provides further evidence for practice we see developing in our own region - a move towards centralised multidisciplinary management of placenta accreta spectrum disorders (PAS) [1].

We noticed in the analysis for volume-outcome relationship, that data were controlled for patient demographics, pregnancy factors and hospital characteristics, which included hospital capacity, teaching status and region.

We would, however, be most interested to examine the complete study covariates with respect to the following points:

- A. Seniority and experience of the Obstetrician and Gynaecologist
- B. Availability of interventional radiology pre-, intra- or post-operatively
- C. The use of fellow non-gynaecological surgical specialists either for immediate recall or present within the operation itself
- D. The use of imaging modalities for patient refinement preoperatively
- E. The use of formal pre operative multidisciplinary meetings for PAS cases

Examining the outcome measure differences between high and low volume centres, the question we would like to ask is, ‘could the outcome measure difference be attributed to the 5 aforementioned aspects of perioperative care?’

High grade evidence is lacking for the treatment of PAS patients. However, intraoperative PAS surgery blood loss may be reduced with pre operative temporary aortic or iliac artery balloon occlusion. Post operative blood loss may be reduced with targeted embolisation. These two fields are the domains of the interventional radiologist and would potentially be linked to the outcome measures of haemorrhage, shock and coagulopathy [2].

Furthermore, with bladder involvement posing a potentially life-threatening problem, often diagnosed intra-operatively, we wonder how both the preoperative use of different imaging modalities for characterisation of PAS subtype, and the involvement of urological surgeons, may relate to the rates of urinary tract injury, as well as haemorrhage and death [3].

We would be very grateful for the opportunity to explore whether the five aforementioned aspects of perioperative care could have accounted for the significant differences between high and low volume centre outcomes as presented by the authors.

Disclosure of interest

The authors declare that they have no conflict of interest

References

- [1] Karkhanis P, Ahmed I, Irani S. Placenta accreta spectrum disorders – detection rate and maternal outcomes following implementation of an institutional protocol. *Journal of Obstetrics and Gynaecology* 2021; 5:1-7. doi 10.1080/01443615.2021.1887110
- [2] Hawthorn B, Ratnam L. Role of interventional radiology in placenta accreta spectrum (PAS) disorders. *Best Practice & Research Clinical Obstetrics & Gynaecology* 2021; 72: 25-37. doi 10.1016/j.bpobgyn.2021.01.007
- [3] Konijeti R, Rajfer J, Askari A. Placenta Percreta and the Urologist. *Reviews in Urology* 2009; 11(3): 173-6. PMID PMC2777065