

Major Severe PPH in a District General Hospital: What can we learn?

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Objective: Primary Postpartum Haemorrhage (PPH) is the second leading direct cause of maternal death in the UK¹. Within this audit we investigated major severe PPH (MSP) to assess the ability to reduce cases and therefore morbidity.

Design: Local audit project at Kingsmill Hospital, Mansfield UK, using Scottish Program for Clinical Effectiveness in Reproductive Health Data collection tool² and clinical standards assessed against the Royal College of Obstetricians and Gynaecologists (RCOG): Prevention and Management of Postpartum Haemorrhage³.

Method: Random sampling of 51 cases through the DATIX incident reporting system over a 5 year period 2015-2020 with estimated blood loss (EBL) of ≥ 2 litres. Data collected for each case included: Age, parity, mode of birth, EBL, haemoglobin, cause and management of PPH etc. Univariate linear regression model was created with EBL as the dependent variable. Factors included in the models were age, parity, cause of PPH, mode of birth, pre and post haemoglobin levels. Age, pre and post haemoglobin levels were handled as continuous variables whilst parity, aetiology and mode of birth were treated as dichotomous variables. Results presented as betacoefficients, p-values and 95% confidence intervals.

Conclusion: Recommendations were created to improve practices, these could easily be adopted by other units. PPH checklists to be readily available with the PPH rescue box, which ensures management is followed in emergency situations. A poster is to be created highlighting the importance of the MDT involvement and escalation processes, this will be placed in the handover room which all levels of staff use. Early identification of PPH risk factors allows for prevention and preparation of such cases aiming to decrease severity of blood loss. Nulliparity, vaginal birth and increasing maternal age are risk factors for MSP.

Results: Vaginal birth, increasing maternal age and nulliparity were associated with risk of MSP. Atony showed less association with MSP compared to other causes. Assessment on the involvement of the multidisciplinary team (MDT), escalation required, monitoring and management were done and improvements could be made in these instances.



Univariate Analysis	Beta Coefficient (95% CI)	P-Value
Age	14.02(-35.69 – 63.74)	0.57
Parity	-38.82(-269.74 – 192.10)	0.74
Cause	-189.40(-788.40 – 409.60)	0.53
Delivery Mode	-659.36(-1182.44 – -136.28)	0.02
Pre-Haemoglobin	3.18(-24.02 – 30.38)	0.82
Post-Haemoglobin	-31.33(-49.61 – -13.04)	0.001

References:
¹ MBRRACE-UK. (2022). Saving Lives, Improving Mothers' Care. [Online]. National Perinatal Epidemiology Unit Oxford. Last Updated: November 2022. Available at: https://www.npeu.ox.ac.uk/assets/downloads/mbrrace-uk/reports/maternal-report-2022/MBRRACE-UK_Maternal_MAIN_Report_2022_UPDATE.pdf [Accessed 16th May 2023].
² Scottish Program for Clinical Effectiveness in Reproductive Health. (2006). Scottish Confidential Audit of Severe Maternal Morbidity, Major Obstetric Haemorrhage, Case Assessment 2006. ³ RCOG. (2016). Prevention and management of Postpartum Haemorrhage. [Online]. RCOG. Last Updated: December 2016. Available at: <https://obgyn.onlinelibrary.wiley.com/doi/epdf/10.1111/1471-0528.14178> [Accessed 16th May 2023] (4) Image used from <https://www.startupguys.net/how-to-follow-the-risk-based-thinking-model-for-iso-9001/> [Accessed 24th May 2023]