NATIONAL PERINATAL EPIDEMIOLOGY CENTRE

SEVERE MATERNAL MORBIDITY in Ireland

SMM Eclampsia Audit

Clinical Reference Manual

Queries to:

Ms Edel Manning; Project manager
e.manning@ucc.ie

Please return all completed forms to the above addressee at:

The National Perinatal Epidemiology Centre
Department of Obstetrics and Gynaecology
5th Floor Cork University Maternity Hospital
Wilton
Cork T12 YEO2

Eclampsia Audit

Background

Eclampsia is a known complication of pre-eclampsia, defined by seizure activity in the antepartum, intrapartum or postpartum period. [1] Eclampsia is a serious and acute complication of the peripartum period that carries with it a high risk of morbidity or even mortality in both mother and baby. [2] In Ireland, the rate of eclampsia over the 5 year period of 2016-2020 was 0.19 per 1,000 maternities, which is lower than reported for the UK (0.27 per 1,000 maternities) and Netherlands (0.54 per 1,000 maternities) [3,4]. While the incidence of eclampsia is relatively low, it is a potentially life threatening condition among a significant number of women hospitalized with gestational hypertension. [5]

In collaboration with the Maternal Morbidity Advisory Group, the NPEC aims to conduct a detailed audit on eclampsia for the year 2023. It is envisaged that this will provide additional valuable information on the management of women experiencing eclampsia in the Republic of Ireland. The eclampsia audit tool is based on the validated data collection tool designed by the Scottish Confidential Audit of Severe Maternal Morbidity,[6] modified for use within the Irish maternity services.

Objectives

- To evaluate epidemiological and risk factors in women experiencing eclampsia
- To identify current clinical practice in the management of eclampsia, including: monitoring and methods used to resuscitate and treat women experiencing eclampsia
- To assess multidisciplinary communication and quality of documentation during an eclamptic event

Defining Eclampsia

For the purpose of this audit, Eclampsia is defined as “Seizure associated with antepartum, intrapartum or postpartum symptoms and signs of pre-eclampsia”.

Inclusion criteria

- All pregnant or recently pregnant women (up to and including 42 days following delivery, miscarriage, ectopic pregnancy or termination of pregnancy) who experienced an eclamptic event.
- Women are identified from the NPEC audit on severe maternal morbidity (SMM).

Data Submission

- It is recommended that cases be submitted to the NPEC on a monthly bases, if at all possible.
- Relevant audit data can be submitted online via the NPEC secure online database, or alternatively in paper format.
- The NPEC kindly request that a SMM audit form be completed as well as an eclampsia form in the relevant cases.

Guidance for completion of Eclampsia Audit dataset

Most questions are self-explanatory, but the following notes give guidance to specific questions within sections of the eclampsia audit dataset. Please contact the NPEC team if you had any further queries.

- The MOH audit dataset is divided into short sections. You will need to come out of the SMM form once it is complete to access the eclampsia form.
- Please complete the eclampsia audit dataset using available information in the maternity case notes and laboratory reports.
- Please do not enter any personally identifiable information (e.g. name, address, or hospital number) in the NPEC online database or the paper audit form.
- A record of the NPEC ID number (number automatically generated in the NPEC online data base) and the woman's hospital ID number should be kept locally in a confidential file to facilitate any queries if necessary.
- Please complete all dates in the format DD/MM/YY; and all times using the 24hr clock e.g. 17:45
- 'Missing information/Not recorded' codes should be used as sparingly as possible.

Guidance for completion of Eclampsia Audit dataset

Initial information

Questions relates to timing of the eclampsia event. Data on maternal demographics are captured on the SMM notification form.

Onset of eclamptic seizure

Details on the timing and location of onset of eclampsia.
Antenatal onset refers to the seizure occurring during the woman's pregnancy
Intra-partum onset is during labour and birth or during a woman's caesarean section
Post-partum onset refers to anytime from the 3rd stage of labour being complete to 42 days after the birth

Prior to eclamptic seizure

When referring to calculation of proteinuria before seizure, please note this does not have to be on the day of the event but can be the latest recorded proteinuria analysis. Please also fill in the date and time of same.

Guidance for completion of Eclampsia Audit dataset

Risk of eclampsia and planning for delivery

Risk factors may refer to the following medical conditions:

- Hypertensive disease during a previous pregnancy
- Chronic kidney disease
- Autoimmune disease such as systemic lupus erythematosus or antiphospholipid syndrome
- Type 1 or type 2 diabetes
- Chronic hypertension (existed pre-pregnancy)

Or, the following maternal factors indicating moderate risk:

- Nulliparity
- Age 40 years or older
- Pregnancy interval of more than 10 years
- BMI of 35kg/m2 or more at first visit
- Family history of pre-eclampsia (Mother/Sister)
- Multi-fetal pregnancy

Guidance for completion of Eclampsia Audit dataset

Treatment of eclamptic seizure

Magnesium sulfate (MgSO4) toxicity can include visual changes, drowsiness, flushing, muscle paralysis, loss of the patellar reflex, respiratory depression or altered cardiac conduction or arrest. [7,8]

Neurological and other assessments at time / following the eclamptic seizure

Focal neurological signs that persist following the seizure can include blindness, stroke, coma etc..

Was a Glasgow Coma Scale recorded? Please see Appendix A for further information on the Glasgow Coma Scale.

Was an AVPU (Alert, Verbal, Pain, Responsive) score recorded? See below guidance for same:

Awake	Patient is awake
Verbal	Patient responds to a verbal stimulus
Pain	Patient responds to a pain stimulus
Unresponsive	Patient is unresponsive to stimulus

Monitoring post eclamptic seizure

What was the highest BP recording – this can include any blood pressure during the woman's inpatient stay.
How was the fetal heart rate monitored – this is referring to immediately after the seizure.

Thank you!

THANK YOU FOR COMPLETING THIS ECLAMPSIA AUDIT DATASET.

YOUR CONTRIBUTION IS GREATLY APPRECIATED AND VALUED

Appendix A: Glasgow Coma Scale[9]

GLASGOW COMA SCALE : Do it this way

GCS EYES VERBAL MOTOR

Institute of Neurological Sciences NHS Greater Glasgow and Clyde

CHECK	OBSERVE	STIMULATE	RATE
For factors Interfering with communication, ability to respond and other injuries	Eye opening , content of speech and movements of right and left sides	Sound: spoken or shouted request Physical: Pressure on finger tip, trapezius or supraorbital notch	Assign according to highest response observed

Eye opening

Criterion	Observed	Rating	Score
Open before stimulus	✔	Spontaneous	4
After spoken or shouted request	✔	To sound	3
After finger tip stimulus	✔	To pressure	2
No opening at any time, no interfering factor	✔	None	1
Closed by local factor	✔	Non testable	NT

Verbal response

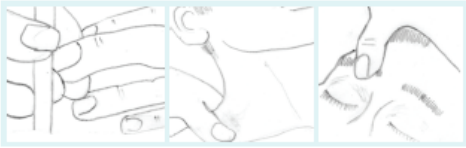
Criterion	Observed	Rating	Score
Correctly gives name, place and date	✔	Orientated	5
Not orientated but communication coherently	✔	Confused	4
Intelligible single words	✔	Words	3
Only moans / groans	✔	Sounds	2
No audible response, no interfering factor	✔	None	1
Factor interferring with communication	✔	Non testable	NT

Best motor response

Criterion	Observed	Rating	Score
Obey 2-part request	✔	Obeys commands	6
Brings hand above clavicle to stimulus on head neck	✔	Localising	5
Bends arm at elbow rapidly but features not predominantly abnormal	✔	Normal flexion	4
Bends arm at elbow, features clearly predominantly abnormal	✔	Abnormal flexion	3
Extends arm at elbow	✔	Extension	2
No movement in arms / legs, no interfering factor	✔	None	1
Paralysed or other limiting factor	✔	Non testable	NT

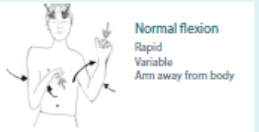
Sites For Physical Stimulation

Finger tip pressure | Trapezius Pinch | Supraorbital notch



Features of Flexion Responses

Modified with permission from Van Der Naalt 2004
Ned Tijdschr Geneeskd



For further information and video demonstration visit www.glasgowcomascale.org

Graphic design by Margaret Frej based on layout and illustrations from Medical Illustration M.I - 2680903
(c) Sir Graham Teasdale 2015

References

1. Magley M and Hinson MR (2023) Eclampsia. StatPearls.
2. Bartal MF and Sibai BM (2022) Eclampsia in the 21st century. American Journal of Obstetrics and Gynecology. 226(2):S1237-S1253.
3. Leitao S, Manning E, Corcoran P, Campillo I, Keane J, McKernan J and Greene RA. (2022) Severe Maternal Morbidity in Ireland Annual Report 2020. (Cork: National Perinatal Epidemiology Centre.
4. Schaap TP, Knight M, Zwart JJ, Kurinczuk P, Brocklehurst P, van Roosmalen J and Bloemenkamp (2014) Eclampsia, a comparison within the International Network of Obstetric Survey Systems. BJOG. 121(12): 1521-1528.
5. Leitao, S, Manning, E, Greene, RA, Corcoran, P, Byrne, Bridgette and the Maternal Morbidity Advisory Group (2022). Maternal morbidity and mortality: an iceberg phenomenon. Royal College of Surgeons in Ireland. 129:402-411
6. Scottish Confidential Audit of Severe Maternal Morbidity: 10th Annual Report (2014). Available from: http://www.healthcareimprovementscotland.org/our_work/reproductive,_maternal__child/programme_resources/scasmm.aspx
7. Grissinger M. (2009) Preventing Magnesium Toxicity in Obstetrics. P T. 34(8):403.
8. Lu JF and Nightingale CH. (2000) Magnesium Sulfate in Eclampsia and Pre-Eclampsia. Clin Pharmacokinet 38, 305–314
9. The Glasgow structured approach to assessment of the Glasgow Coma Scale. Available at: https://www.glasgowcomascale.org/

GET IN TOUCH

EMAIL ADDRESS
npec@ucc.ie

PHONE NUMBER

+353 (0)21 420 5053

LOCATION

5th Floor, Dept. of Obs & Gynae, Cork University Maternity Hospital, Wilton, Cork

SEVERE MATERNAL MORBIDITY in Ireland

THANK YOU

NATIONAL PERINATAL EPIDEMIOLOGY CENTRE

SEVERE MATERNAL MORBIDITY in Ireland