

PLGF Point of Care Test for decision-making in Preeclampsia

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Project Background:

Ambiguities arising out of the complexities in conventional risk stratification of women with suspected pre-eclampsia inevitably lead to repeated hospital attendances, increased use of resources, considerable anxiety for women and often missed at-risk cases.

With the advent of the COVID pandemic, in order to reduce unnecessary admissions and visits to the hospital, to optimize patient outcomes, this evidence-based pilot study was conceived.

Project Aims/Objectives:

1. Accurately risk stratify the patients with suspected pre-eclampsia.
2. Reduce the number of repeat outpatient attendances unnecessary hospital admissions in patients with suspected pre-eclampsia.
3. Avoid missing at risk patients that may slip through the gaps.
4. Preventing iatrogenic preterm births and potentially Special Care baby Unit (SCBU) admissions.
5. Allay the anxiety and mental health issues for the patient and their families associated with hospitalisation.
6. Optimise the use of NHS resources including but not limited to the burden on the pathology laboratories, health care staff, emergency department and maternity day assessment units – thereby making tremendous positive managerial and financial impact.

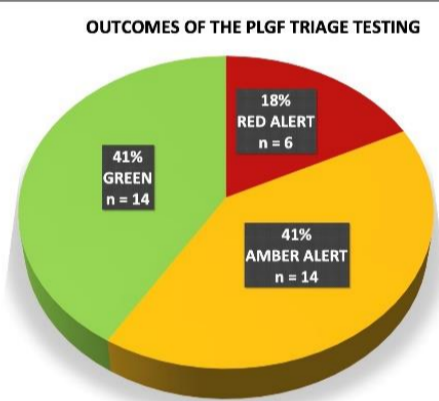
Project Approach:

Collaborating with Biochemistry department to decide on which type of PLGF analyzer, writing a business case to Betsi Cadwaladr University Health Board (BCUHB) to get approval, setting out the strict inclusion criteria, determine the duration of the project, Training the doctors and midwives to use the machine and run QC tests weekly, regularly audit uptakes, meet with the staff to ensure motivation to engage with the project. Collect relevant data in an approved excel database, clean it, and do a descriptive analysis to derive inferences.



Project Outcome(s):

Cohort of 34 women, All 6 cases in the red group were admitted, developed severe preeclampsia (2 of which developed HELLP) within the same week, were stabilized, given prophylactic steroids in view of prematurity and were delivered. The amber group was managed with increased outpatient surveillance until a max. of 37 - 38 weeks.



The patients in the green group were cared for on an outpatient basis to prolong the pregnancy without inpatient admission till term. 68% of the cases in our cohort of 34 women, were cared for with outpatient surveillance alone. There were no stillbirths or unnecessary iatrogenic preterm deliveries.

Project Impact:

1. PLGF Triage testing proved to be of excellent diagnostic value in the local cohort of patients with suspected pre-eclampsia.
2. Prevented maternal complications like eclampsia / stroke / DIC / death.
3. Prevented foetal complications: stillbirths, prevented iatrogenic preterm deliveries
4. Provided reassurance for outpatient surveillance and alleviated maternal anxiety allowing patients in this sub-group to safely go home – implications on her and her family's mental and physical health (especially in the pandemic), associated childcare and travel costs.

5. Total net bed cost savings of the outpatient management of the 68% of the cases identified in the study period saved the hospital about £ 34,304 in 6 months alone.
6. SCBU cost/day saved about £1,118 day to look after iatrogenic preterm in intensive care.
7. Saved medicolegal costs in terms of litigation for stillbirth/eclampsia/stroke.
8. Impact on midwifery and HCA staffing and turnover in labour ward ensuring smooth transition of patient from the induction bay to the labour ward.
9. Interestingly, each patient that avoids hospitalization due to the PLGF triage test reduces the greenhouse gas emissions equating to 35 T on CO2 making the project's entire footprint to be near carbon neutral and in fact be greatly beneficial to the environment.

Next Steps:

- The PLGF has been incorporated in to local guideline for the management of patients with suspected pre-eclampsia.
- Recruited our sister organisations in North Wales to use the PLGF testing and looking to improve the uptake
- Await implementation in South Wales

Project Laurels:

Presented in the regional audit meeting in North Wales and won a prize for the most innovative project. Presented at the **Welsh Obstetrics & Gynaecology Society Spring Conference** in Cardiff where it generated a lot of interest and was widely appreciated. Poster and presentation at the **RCOG World Congress 2022** as a **top scoring abstract**. Published in the **British Journal Of Gynaecology**. Virtual presentation with ensuing Q&A session at the **International Society for the Study of Hypertension in Pregnancy (ISSHP) in Montpellier, France in a Quidel Symposium**.

Key Conclusions:

“The PLGF Test is an evidence based, cost-effective, bedside, environmentally beneficial triage test that enhances maternal and foetal safety, improves outcomes, benefits the patient and the NHS financially and safeguards the national health service and the patients from potential litigation.” ~ PLGF Pilot Team