Worcestershire Acute Hospitals NHS Trust

sFLt/PlGF Ratio in the Management of Suspected Pre-eclampsia

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Approved by Maternity Quality Governance Meeting on:	15th November 2019
Review Date This is the most current document and should be used until a revised version is in place:	15th November 2022

Key Amendment

Date	Amendment	Approved by

Key recommendations:

- The sFLT/PlGF ratio is an aid for the diagnosis of pre-eclampsia (PET). It should not be used in admitted patients, nor used to decide on the timing of delivery.
- The sFLT/PlGF ratio should be collected in addition to other investigations already taken for suspected PET.
- Amongst women with suspected PET, the sFLT/PlGF ratio can be used to identify those women with a very low risk or to identify those with an increased risk.
- It should only be used in conjunction with existing local guidance for PET

Background:

PET is a multisystem disorder that carries a significant risk of maternal or fetal morbidity and mortality.

The current management of suspected PET often involves admission to hospital for treatment and/or maternal and fetal monitoring. The manifestation and development of PET is varied, meaning that it is difficult to identify which women and babies are the most at risk of developing complications.

A blood test can be used to identify women at very low or very high risk of imminently developing PET. The sFLT/PlGF ratio measures the ratio of two biomarkers, soluble fms-like tyrosine kinase-1 (sFLT) and placental growth factor (PlGF). This is raised in women who have or who are developing PET.

The sFLT/PlGF ratio can be used to assess the risk of developing PET, to help guide appropriate admission and subsequent management.

Aims:

Through using sFLT/PlGF the aim is to:

- Identify women who are very unlikely to develop PET in the next 7 days
- Identify women who are at increased risk of developing PET in the next 7 days
- Prevent unnecessary admissions for women at low risk of developing PET
- Increase surveillance of women at high risk of developing PET

Identifying risk:

Women with suspected PET should be referred to the Day Assessment Unit or Triage as per local WAHT guidance. There are many criteria that may contribute towards a clinical suspicion of PET. These include the following:

- Hypertension (>140/90 mmHg or significant rise when compared to booking)
- New onset of proteinuria (≥2+ protein on urine dip) or significant worsening pre-existing proteinuria (PCR ≥30 mg/mmol)
- Elevated serum creatinine
- Elevated transaminases
- Right/upper abdominal pain
- Seizures
- Altered mental state
- New-onset visual disturbance
- Signs/symptoms stroke
- Hyper-reflexia and/or clonus
- Severe headache
- Peripheral oedema
- Shortness of breath
- Signs and symptoms of pulmonary oedema
- Low or decreasing haemoglobin or other signs/symptoms of haemolysis
- Thrombocytopaenia (platelets <150,000/dL)
- Haemorrhage or other signs/symptoms of DIC
- Fetal growth restriction

Initial management:

For women **20-34+6 weeks gestation with a singleton pregnancy** and suspected PET the following steps should be undertaken **in addition** to usual management of PET:

- The midwife/doctor should draw blood into a "gold top" serum blood tube and send it to the biochemistry laboratory
- The test can be requested on ICE listed at "PET risk (sFLT/PlGF)"
- The result should be reviewed by the Registrar/Consultant on call prior to discharge or admission
- Women with a low risk result may still need admission due to maternal/fetal compromise e.g. uncontrolled hypertension, suspected fetal distress
- The sFLT/PlGF ratio should be clearly documented in the patient's notes along with the results of all other investigations
- The sFLT/PlGF ratio should not be repeated with 14 days

Management at 20-34+6 week's gestation

The algorithm for the interpretation of sFLT/PlGF ratio in women with suspected PET at 20-34+6 weeks gestation is displayed in Appendix 1.

The blood results will display values for the individual serum concentrations of sFLT and PlGF as well as the sFLT/PlGF ratio. For the purpose of this guideline only the sFLT/PlGF ratio will be used.

sFLT/PlGF ratio ≤38

- These women are very low risk for development of PET
- The likelihood of these women developing PET in the next 7 days is 0.4% (<3% in the next 28 days)
- Following review by the Registrar/Consultant on call, women with sFLT/PlGF ≤38 **should not** be admitted for suspected PET
- However they may need to be admitted if there are other clinical concerns, especially around uncontrolled hypertension
- Outpatient treatment and follow-up should be considered for other conditions (e.g. pregnancy-induced hypertension, obstetric cholestasis) as per WAHT guidance following medical review
- Routine antenatal care should resume
- Referral to consultant-led clinic should be made if the woman is not yet under consultant care

- If there is a new suspicion of PET following discharge, the woman should be referred for investigation as per WAHT guidance but the sFLT/PlFG **should not be repeated within 14 days**

sFLT/PlGF ratio >38 but ≤85

- These women are at increased risk of developing PET
- The likelihood of these women developing PET in the next 7 days in 20%
- If there is no evidence of significant proteinuria or end-organ dysfunction, women **should not** be admitted for suspected PET
- They may need to be admitted for other clinical concerns, including uncontrolled hypertension
- A plan should be made for twice-weekly blood pressure checks and urinalysis with the community midwife/GP
- If discharged, a referral should be made for review in Consultant clinic within 1 week
- If there is evidence of significant proteinuria or end-organ dysfunction the woman should be reviewed by the Registrar or Consultant on call. Admission and monitoring as per WAHT guideline should be followed.

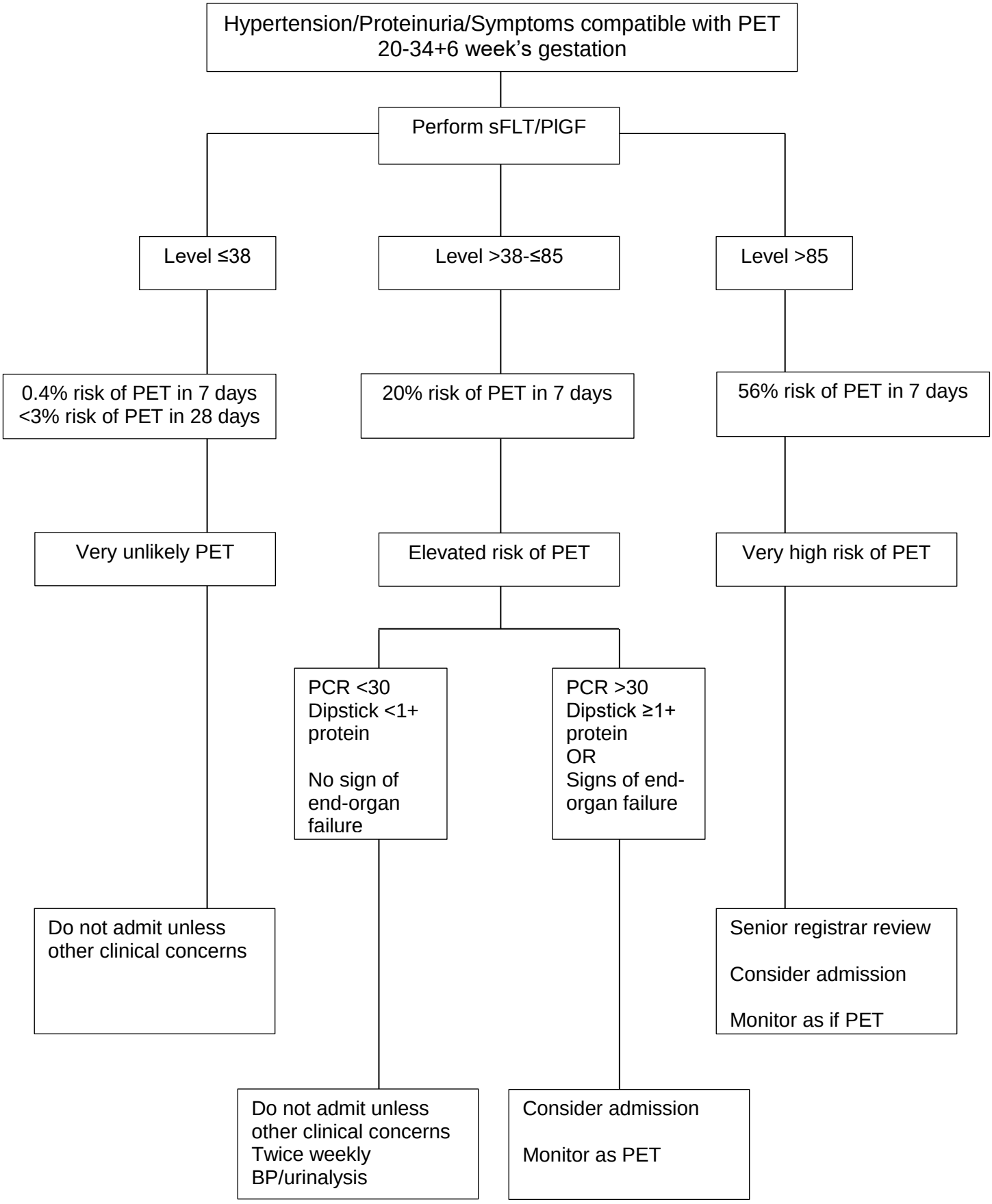
sFLT/PlGF ratio >85

- These women are high risk for developing PET
- The likelihood of these women developing PET in the next 7 days is 56%
- Women should be reviewed by the Registrar or Consultant on call.
- Admission and subsequent management for PET, following WAHT PET guideline should be followed

Management after 34+6 weeks gestation

Women with suspected PET from 35+0 weeks onwards have a high risk of developing PET. The woman should be reviewed by a senior registrar who should decide about the admission and monitoring as per WAHT guideline. Do not use sFLT/PlGF in this cohort of women.

Appendix 1 - sFLT/PlGF ratio Algorithm



References

Contribution List

This key document has been circulated to the following individuals for consultation;

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This key document has been circulated to the chair(s) of the following committee's / groups for comments;

Committee
Maternity Quality Governance Meeting

Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the policy/guidance affect one group less or more favourably than another on the basis of:**		
	Race	N	
	Ethnic origins (including gypsies and travellers)	N	
	Nationality	N	
	Gender	Y	For pregnant women
	Culture	N	
	Religion or belief	N	
	Sexual orientation including lesbian, gay and bisexual people	N	
	Age	N	
2.	**Is there any evidence that some groups are affected differently?**	N	
3.	**If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?**	N	
4.	**Is the impact of the policy/guidance likely to be negative?**	N	
5.	**If so can the impact be avoided?**	NA	
6.	**What alternatives are there to achieving the policy/guidance without the impact?**	NA	
7.	**Can we reduce the impact by taking different action?**	NA	

If you have identified a potential discriminatory impact of this key document, please refer it to Human Resources, together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact Human Resources.

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	**Yes/No**
1.	Does the implementation of this document require any additional Capital resources	N
2.	Does the implementation of this document require additional revenue	N
3.	Does the implementation of this document require additional manpower	N
4.	Does the implementation of this document release any manpower costs through a change in practice	Potentially
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	Potentially
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval.