Fact Sheet: sFlt-1/PIGF ratio

**Background**

Preeclampsia is a common multisystem disorder of pregnancy with significant adverse effects on both mother and baby. It is thought to be a disease of the vasculature, driven by placental hypoperfusion. Compared to normal pregnancies, the anti-angiogenic factor, soluble fms-like tyrosine kinase 1 (sFlt-1) is higher, and the pro-angiogenic factor, placental growth factor (PIGF) is lower in preeclampsia.

In clinical studies the sFlt-1/PIGF ratio has demonstrated high specificity for excluding preeclampsia in pregnant women with symptoms or signs suspicious for preeclampsia.

The test is **not** required as a “confirmatory” test when diagnostic criteria for preeclampsia are met and the evidence is insufficient to use this test for ruling in preeclampsia.

**Test performance**

NSW Health Pathology’s Randwick laboratory is offering this test through its Reproductive Endocrinology Laboratory.

**Method**: sFlt-1 and PIGF immunoassay by Roche

**Turnaround time**: For samples arriving in the laboratory before 1pm Monday to Friday (public holidays excluded) same day results will be available. For samples arriving outside these times, results will be available on the next working day.

*For same day results please contact the laboratory on 9382 6641.*

**Sample requirements**

Preferred sample type: Gold top serum gel tube.

**Test indication:**

Women > 20 weeks gestation with:

1. Symptoms or signs suspicious for but not diagnostic of preeclampsia including:
   - Labile hypertension
   - Unexplained epigastric or upper abdominal pain, headache or visual scintillations
   - Renal impairment, proteinuria, thrombocytopenia, liver dysfunction without hypertension
   - Where an alternate diagnosis to preeclampsia is being considered; e.g. SLE, underlying renal or liver disease
2. Women with isolated intrauterine growth restriction or suspected placental insufficiency

**Test requesting:**

The test can be requested as sFlt-1, PIGF or preeclampsia screen. Any of these requests will automatically generate both sFlt-1 and PIGF tests and their ratio.

The clinical indication must be included on the request form or by selecting one of the below indications from a drop-down menu in eMR:

1. Suspected preeclampsia
2. Isolated proteinuria
3. Isolated intrauterine growth restriction

Limit of one test (including sFlt-1 and PIGF) per patient per week.
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**Interpretation of results**

sFlt-1 and PIGF should be interpreted in combination as the sFlt-1/PIGF ratio. As such a diagnostic cut off is provided for the ratio only.

Several large studies have demonstrated the utility of the sFlt-1/PIGF ratio for ruling out preeclampsia. A cut off of <38 has a high negative predictive value. In women >20 weeks gestation presenting with suspected preeclampsia in whom diagnostic criteria are not met, an sFlt-1/PIGF ratio <38 rules out preeclampsia for at least 1 week.

However, there is limited evidence on the positive predictive value of an increased ratio and therefore the test is not recommended for ruling in preeclampsia.

There is ongoing research into the clinical utility of these biomarkers, therefore these test results are for guidance and should be carefully interpreted in the clinical context and along other investigations currently used for diagnosing preeclampsia.

**Cost**

At present these tests do not receive a Medicare rebate. The laboratory will charge a fee of $80 for this service.

**Send samples to:**

NSW Health Pathology, Reproductive Endocrinology Laboratory, Fertility and Research Centre
Ground floor, Royal Hospital for Women
Barker St, Randwick NSW
Tel: 02 93826641

**Enquiries:**

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**References:**