BC Prenatal Genetic Screening Program

Perinatal Services BC
An agency of the Provincial Health Services Authority

CHANGES TO PRENATAL SCREENING:

Serum Analyte Cut-offs

May 9th, 2013 *Revised November 2015*

Dear Colleague,

This letter is to notify you of **important** changes made to the maternal serum analytes' cut-offs to identify women at increased risk of adverse obstetrical outcome.

The BC Prenatal Genetic Screening Program has completed a 2 year analysis of maternal serum screens to determine the predictive value of the serum markers for obstetrical risk. In the population screened, the prevalence of a severe adverse obstetrical outcome (stillbirth, preterm birth <34 weeks, or HELLP syndrome) and pre-eclampsia were 2.0% and 4.8% respectively. The probability of these outcomes was calculated for each marker based on different cut-off levels. Based on our data, **the cut-offs for PAPP-A and hCG have been revised to increase the predictive value of these two analytes and decrease the number of false positives.** Cut-offs for AFP, uE3, and Inhibin A remain unchanged. The cut-offs are now set at **PAPP-A ≤0.15MoM, uE3 ≤0.40MoM, AFP ≥2.5MoM, hCG ≥4.0MoM, and Inhibin A ≥3.0MoM**. The table on page two can be used to determine the risk of a severe adverse obstetrical outcome or pre-eclampsia based on the patient's results.

Regarding management, patients who screen positive for Down syndrome or trisomy 18 and have an abnormal analyte should be offered further testing (CVS, amniocentesis or Non Invasive Prenatal Testing) to exclude a chromosomal abnormality. Furthermore, all patients with an abnormal analyte should be assessed for the presence of additional risk factors (medical history, obstetrical history, blood pressure, uterine artery Doppler if available). In the absence of evidence supporting any specific surveillance protocol,

- Patients with a single abnormal serum analyte and no additional risk factor should have, at a minimum, a follow up ultrasound at 28-30 weeks gestation to assess fetal growth and amniotic fluid volume.
- For patients with either two abnormal serum analytes OR one abnormal serum analyte and an additional risk factor OR a severely abnormal serum analyte (AFP≥3.5 MoM, hCG≥4.5 MoM, Inhibin≥4.0 MoM), consultation with an obstetrician or maternal fetal medicine specialist is recommended to establish a fetal surveillance plan. This may include monitoring with ultrasound and pre-eclampsia blood work every 2-4 weeks depending on the level of risk.

Finally, our data reinforces that Serum Integrated Prenatal Screening (SIPS) is **NOT** indicated for the sole reason of predicting adverse obstetrical outcomes as the detection rate is 8% for severe adverse obstetrical outcome and 5% for pre-eclampsia with a false positive rate close to 2%.
IPS/SIPS/Quad should continue to be ordered only for women who want screening for Down syndrome.

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Probability of an Adverse Obstetrical Outcome From the Analysis of Maternal Serum Markers

		Cut off Value (MoM)	Adverse Obstetrical Outcome (stillbirth, preterm birth <34 weeks, HELLP syndrome)	Pre-Eclampsia
Population Risk (or Pre-Test Probability)			**2 %**	**4.8%**
Low	**PAPP – A**	≤0.15	9%	11%
Low	**uE3**	≤0.40	8%	6%
		≤0.30	4%	N/A
High	**AFP**	≥2.5	11%	11%
		≥3.0	17%	14%
		≥3.5	18%	18%
High	**hCG**	≥4.0	10%	15%
		≥4.5	18%	22%
High	**Inhibin A**	≥3.0	11%	17%
		≥3.5	14%	22%
		≥4.0	20%	25%
		≥4.5	25%	29%

A printable PDF version of this table including management recommendations can be found at www.bcprenatalscreening.ca.

Yours sincerely,

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