Mechanisms of long-term cardiac dysfunction after preeclampsia

Bhavisha A Bakrania1,2, Victoria A deMartelly1, John Dreixler1, Avery Tung4, Ariel Mueller4, Sarah Heimberger3, Abid A Fazal4, Heba Naseem3, Roberto Lang6, Eric Kruse3, Megan Yamat3, Joey P Granger2, Javier Rodriguez-Kovacs3, Sarosh Rana3, Sajid Shahul4
1CCR and Perinatal Research Centre, University of Queensland, 2Department of Physiology and Biophysics, University of Mississippi Medical Centre, MS, 3Department of Obstetrics and Gynaecology, University of Chicago IL, 4Department of Anaesthesia and Critical Care, University of Chicago IL, 5Department of Anaesthesia Critical Care and, Pain Medicine Massachusetts General Hospital, Harvard Medical School, Boston, MA, 6Department of Medicine University of Chicago IL

BACKGROUND
• Preeclampsia, a hypertensive disorder of pregnancy, is a prominent risk factor for long-term development of cardiovascular disease.
• Activin A is elevated in preeclampsia and is associated with impaired cardiac function.
• Whether Activin A remains elevated following a preeclamptic pregnancy is not known.

AIM
Activin A levels remain increased 10 years after a preeclamptic pregnancy and correlate with impaired cardiac function.

METHODS
We performed echocardiograms and measured activin A levels in women at the University of Chicago Medical Centre approximately 10 years after an uncomplicated pregnancy (n=25) or a pregnancy complicated by preeclampsia (n=21).

RESULTS
Elevated plasma Activin A is associated with poor cardiac function in women 10 years after a preeclamptic pregnancy

CONCLUSIONS
• Activin A is elevated 10 years after preeclampsia
• These data support plans to investigate the relationship between Activin A and cardiac dysfunction in preeclampsia.
• Studies in animal models will be crucial to understand how high Activin A in preeclampsia results in long-term cardiac disease.