



Mechanisms of long-term cardiac dysfunction after preeclampsia

Bhavisha A Bakrania^{1,2}, Victoria A deMartelly³, John Dreixler⁴, Avery Tung⁴, Ariel Mueller⁵, 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

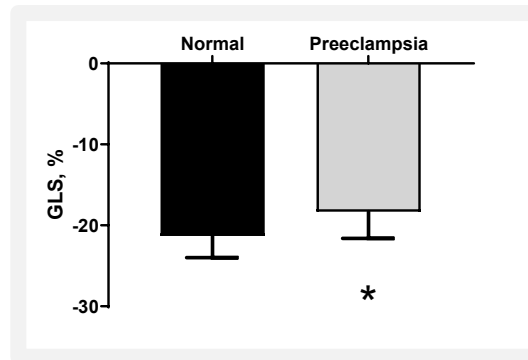
- Preeclampsia, a hypertensive disorder of pregnancy, is a prominent risk factor for long-term development of cardiovascular disease.
- Activin A is elevated in preeclampsia and is associated with impaired cardiac function.
- Whether Activin A remains elevated following a preeclamptic pregnancy is not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

AIM

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

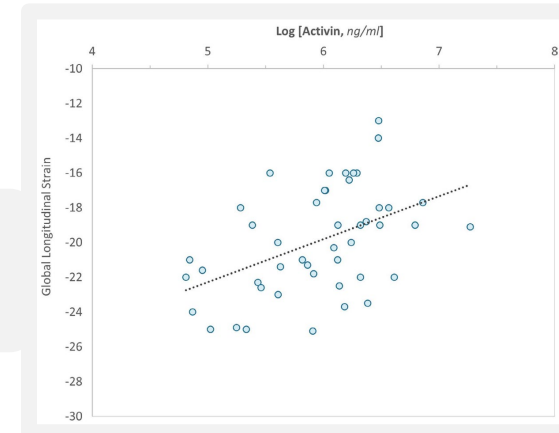
METHODS

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).



Cardiac function (GLS, global longitudinal strain) is impaired in women 10 years after preeclampsia

Greater plasma Activin correlates to poorer cardiac function



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.