

OP-BS-02**Bisphenol A Downregulates miR-17-5p Expression and Lead to Increase in Weight of Pregnant Rats**

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INTRODUCTION

Endocrine disruptor compounds such as bisphenol A (BPA) may act as an oestrogen at doses within the range of environmental exposure and could interfere with hormones and cell signaling pathways. Over the past 10 years, several human epidemiological studies have associated BPA exposure with adverse health outcomes such as obesity, premature births and neuro-behavioural disturbances. However, its impact on the pregnant outcomes and miRNA expression (epigene) are not well understood. In here, we aimed to investigate the impact of daily BPA exposure on pregnancy outcomes and expression of important miRNAs in normal cardiac function using pregnant Sprague Dawley (SD) rats.

METHODOLOGY

The pregnant rats were grouped into three; 1) Control vehicles (Tween-80), 2) 0.05 mg/ml BPA exposure and 3) 0.2 mg/ml BPA exposure. Observation on weight gained and water intake of pregnant rats was noted throughout the pregnancy day (PD). Numbers, weight and gender of foetuses produced were compared among treatment groups. miRNA PCR analyses of the extracted pregnant hearts were performed on 9 targeted miRNAs related to cardiac development and disease.

RESULTS

Significant changes in weight gained were observed as pregnancy progressed ($p < 0.001$). No significant differences on water intake during pregnancy and foetus outcomes (number, weight and gender) between treatment groups ($p > 0.05$) were observed. Significant changes on miR-17-5p expression were observed for both BPA-exposed groups; 0.05 mg/ml BPA ($p = 0.007$) and 0.2 mg/ml BPA ($p = 0.002$).

CONCLUSION

The weight gained among control and treated groups was significant, thus highlighting the impact of BPA on pregnancy health. Alteration in miR-17-5p is linked with cardiac diseases and metabolic disorders in BPA-exposed subjects. Our result postulated that BPA exposure during pregnancy increases the risk of obesity and cardiac disease development in mother. However, further investigation is required to elucidate the impact of BPA exposure in pregnant mother especially at cellular levels.