



**Inclusion Criteria**

**BOH group:** Pregnant women (18-45 yr) with a Bad Obstetric History (BOH) such as inevitable abortion, recurrent abortions, intrauterine death (IUD), fetal growth restriction (FGR) and premature deliveries were enrolled in the study. Based on clinical evaluation, women with high risk pregnancy were recruited (pregnancy complications: Markers of ultrasound such as hyper echogenic bowel and cerebral ventriculomegaly).

**Without BOH group:** Pregnant women (18-45 yr), without BOH or the preceding complications were recruited as controls.

**Exclusion Criteria**

Gestational diabetes, autoimmune disorders, HIV, Hepatitis B, RTIs/STIs

**Supplementary Fig. 1.** Study design and workflow. Info graphic images adopted from Microsoft Office.