



BIODIVARsITY-BRCAness In Breast and Ovarian Cancer: Impact of Diverse Arsenic Exposure in India in causation and Prevention strategY

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Trial setting: Primary ovarian cancer prevention Trial Model: Academic (A)

Trial status – **New Concept development stage**

Study Design: Observational/Epidemiological study /Intervention

Peer Review:

Groups: KolGo Trg (Kolkata Gynecology Oncology Trials and Translational research group, India)

(KolGo-PROVAR-005).

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Objectives: Breast and ovarian cancers are seen at much younger age in Eastern India compared to the western world. 30% of patients have BRCA gene related cancers where PARP inhibitor therapy has shown immense benefits. Previous studies have indicated that environmental Arsenic pollution, prevalent in the Gangetic belt can be a carcinogen. Arsenic can affect the PARP function through its interaction on the Zinc finger domain leading to faulty DNA repair and carcinogenesis. It is possible that it will affect the function of PARP inhibitors. We propose to perform a study to answer the following questions

- 1) Can environmental arsenic be a risk factor for early onset breast and ovarian cancers
- 2) Will it affect the efficacy of PARP inhibitors in BRCA related cancers and if yes,
- 3) Can Zinc supplementation be a strategy to overcome this