**Original article:**

**Interplay between Nitric oxide, mitochondrial thiols and thioredoxin system in cancers of ovary and cervix.**

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**Abstract:**

**Introduction**: Nitrosative stress in mitochondria which is mainly created by nitric oxide, nitrothiol and nitrotyrosine may alter thiol status in cancers of ovary and cervix. As an antioxidant defence Thioredoxin system may be playing role in restoring the functions.

**Methods**: Mitochondria were lysed and lysate was used for estimation of Trx, TR, nitrothiols, total and membrane thiol concentrations. The cell lysate was used for estimation of nitrotyrosine. NOx (nitrate and nitrite) levels were estimated in plasma samples.

**Observation:** We found that the levels of total mitochondrial and membrane protein thiols were decreased significantly (p<0.05). Levels of NO were not much affected and nitrothiols were not detected. However nitrotyrosine was detected which may be contributing to thiol modification. The levels of thioredoxin and thioredoxin reductase were elevated significantly (p<0.05).

**Result** **and Conclusion**: NO, nitrothiols and nitrotyrosine might be responsible for reduction in mitochondrial thiols. This modification of thiols may be counteracted by thioredoxin system.

**Keywords:** Nitric oxide, nitrotyrosine, nitrothiols, Thioredoxin system