

## Changes in Blood Estrogen Level after Cholecystectomy in Pre-Menopausal Women

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### ABSTRACT

Estrogen is the main female sex hormone. Estrogen is largely metabolized in the liver via several routes, enabling the body to eliminate and detoxify estrogen. Gallbladder stones are a commonly encountered problem in our local society and Cholecystectomy is one of the most frequently performed surgical procedures. The link between estrogen level and gallstone formation has been studied before but, the changes in blood estrogen levels in pre-menopausal women after cholecystectomy were rarely mentioned in research articles. The study aims to examine the changes in blood estrogen levels in pre-menopausal women post-cholecystectomy. A prospective - observational study, assessing the estrogen levels of 77 pre-menopausal women before and one month after cholecystectomy.

**Inclusion Criteria:** Pre-menopausal women who have gallstones and require cholecystectomy and with a regular menstrual cycle. **Exclusion Criteria:** Patients who are pregnant or with irregular cycles, who have diabetes, hypertension, thyroid disorders and those on hormonal therapy (HRT) like oral contraceptive pills (OCP) and contraceptive patches. Patients with ovarian, uterine and breast cancer, adrenal gland tumors, polycystic ovary syndrome (PCOS) and endometriosis. We found that the levels of estradiol (E2 (one month after cholecystectomy were higher in concentration. A statistically significant disparity in the magnitude of estradiol (E2) was found prior to and during 1-month period after gallbladder removal in pre-menopausal women.

**Keywords:** Estradiol, estrogen metabolism, post-cholecystectomy, pre-menopausal women

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