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The Diagnosis and Treatment of Non-Epithelial Ovarian Cancer in Pregnancy: A Systematic Review

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Abstract

Background: Ovarian cancer can be classified into epithelial ovarian cancer (EOC) and non-epithelial ovarian cancer (NEOC). NEOC accounts for 10% of ovarian cancers; however, it has a high prevalence in young women and adolescents. The prevalence of ovarian cancer co-existing with pregnancy is expected to rise in developed countries due to the delay in the age of childbearing. The complications that can arise due to NEOC in pregnancy include, spontaneous abortion, ventriculomegaly, respiratory distress syndrome, along with maternal and foetal loss of life. The aim of the report was to conduct a systematic review to identify the most efficacious diagnostic tool and management strategies for the early identification of NEOC in pregnancy to improve foetal-maternal outcomes.

Methods: Two electronic web-based databases were searched for relevant literature (PubMed and Embase). The search was conducted within a 5-year limit from January 2019 to January 2024 using the following search terms: “pregnan*” AND “non-epithelial ovarian cancer” AND “diagnos*” AND “manage*”. The words with a “*” means they were truncated to find variations of the same word in the literature.

Results: There were 4 articles found in the literature between the years 2019 – 2021 that discussed the diagnosis and management of NEOC in pregnancy. Of these, there was a total of 44 cases that reported NEOC in pregnancy. Thirty-four of the 44 cases were diagnosed with NEOC in the International Federation of Gynaecology and Obstetrics (FIGO) stage I of the disease identified using ultrasonography during the routine ultrasound scans of pregnancy. The majority of cases diagnosed in Stage I received a unilateral salpingo-oophorectomy, a fertility-sparing surgical treatment, in combination with adjuvant platinum-based chemotherapy.

Conclusions: There are no standardised guidelines on the management of NEOC in pregnancy due to the various factors involved in the management, such as FIGO staging, gestational age and maternal decision making. Routine ultrasonography during the stages of pregnancy was found to be an effective tool for the initial identification of NEOC in pregnancy, with most patients being asymptomatic before scanning. Fertility-sparing surgery, along with adjuvant platinum-based chemotherapy can be considered as the best

treatment combination for pregnant women who want to continue their current pregnancy and may want children later in life; permitted only if the NEOC is in FIGO stage I of the disease.

Keywords: Non-epithelial ovarian cancer | Pregnancy | Ultrasound | Surgery | Chemotherapy

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