# **Neoadjuvant chemotherapy in early-stage cervical cancer ( <2 cm) before conization for fertility preservation: is there any advantage over upfront conization?**

## **Abstract**

**Background:** Neoadjuvant chemotherapy before fertility-sparing surgery is an accepted option for patients with cervical tumors between 2 cm and 4 cm. There is a paucity of data regarding its role in patients with tumors <2 cm. Our objective was to compare the oncological and obstetrical outcomes between patients who underwent neoadjuvant chemotherapy before cervical conization versus upfront cervical conization in patients with cervical cancer with tumors <2 cm.

**Methods:** We conducted a systematic literature review and searched MEDLINE, EMBASE, and CINAHL (from 1995 to March 2020) using the terms: uterine cervix neoplasms, cervical cancer, fertility-sparing surgery, fertility preservation, conization, cone biopsy, and neoadjuvant chemotherapy. We included manuscripts with information on patients with tumor size <2 cm, lymph node status, follow-up, oncological and obstetrical outcome, and toxicity related to neoadjuvant chemotherapy. We excluded review articles or articles with duplicated patient information.

**Results:** We identified 12 articles, including 579 patients. For final analysis, 261 patients met inclusion criteria. The most common histology was non-squamous cell carcinoma (62%). Median follow-up time was 63.5 (range 7-122) months for the neoadjuvant chemotherapy group and 48 (range 12-184) months for the upfront cervical conization group. There was no difference in either overall survival (neoadjuvant chemotherapy group 100% vs upfront cervical conization 99.7%, p=0.79) or disease-free survival (neoadjuvant chemotherapy 100% vs upfront cervical conization 98.9%, p=0.59) between the groups. Fertility preservation rate was 81.4% versus 99.1% (p<0.001) favoring upfront cervical conization. No statistically significant differences were seen in live birth rate or pregnancy loss. Also, we found that all neoadjuvant chemotherapy patients reported chemotherapy-related toxicity (30.7% grade 3 and 69.2% grade 1-2).

**Conclusions:** There was no difference in disease-free survival or overall survival between patients who underwent neoadjuvant chemotherapy followed by conization and upfront cervical conization. Patients who underwent upfront cervical conization had a higher fertility preservation rate.

**Keywords:** cervical cancer; cervix uteri.

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