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COMPARISON OF EFFICACY AMONG DIFFERENT THERAPEUTIC APPROACHES IN ECTOPIC PREGNANCY

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Introduction. Ectopic pregnancy (EP) occurs when the fertilized ovum implants outside the endometrial cavity with an incidence of 1% of all pregnancies [2,5,8]. Frequently, the products of conception grow in the fallopian tube. Other implantation sites are the ovaries or the cervix. The vast majority of EP cases affect the fallopian tube, with 70-76 % of these tubal EPs occurring in the ampullary portion, 11-16 % in the isthmic portion and about 2-10 % of in the fallopian tube's fimbrial end[2,4,6,7,8].

Affected patients may face significant morbidity or even mortality. Prior tubal surgery or a prior tubal pregnancy are the most important risk factors for tubal pregnancy[4,6,7]. Women with an active or prior ascending infection with Chlamydia trachomatis or Neisseria gonorrhoeae are at an elevated risk of extrauterine pregnancy[1,3]. Extrauterine pregnancy may be wholly asymptomatic (intact tubal pregnancy),or it may present with pelvic pain that is worse on one side (tubal abortion) or with severe hemorrhagic shock (tubal rupture)[7,9]. Extrauterine pregnancies are most diagnosed in the 6th through 9th week of gestation [1,4].

Most patients present with nonspecific complaints. The symptom triad of mild vaginal spotting in the first trimester, aching pelvic pain, and secondary amenorrhea may indicate extrauterine pregnancy but can also arise in an intact intrauterine pregnancy or because of early miscarriage. Further suggestive manifestations include abdominal pain radiating to the shoulder(s), abdominal guarding or an acute abdomen, pain on displacement of the vaginal portion of the cervix, hemorrhagic shock/hemodynamic instability (dyspnea, hypotension, tachycardia), and syncope [2,5,7,8].

During the last decades, transvaginal ultrasound, and beta-human chorionic gonadotropin (beta-HCG) levels became part of the clinical routine leading to the timely detection of ectopic pregnancies and better patient outcomes [1,7,9].

Goal of the research. Understand the impact on rate of pregnancy after medical or surgical management of ectopic pregnancy.

Materials and research methods. This is a literature review from based on the results of medical reports (the symptoms, diagnostic tests, EP risk factors, medical reproductive and surgical history clinical status during EP surgery) from PubMed, Google Scholar and Science Direct databases about ectopic pregnancy, published

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worldwide. The search criteria were limited to information published from 2017 to 2023.

Research results. Improved diagnostic methods now enable most patients to have elective rather than emergency surgery. Laparoscopy is the gold standard of surgical treatment for extrauterine pregnancy in the tubes. The advantages of laparoscopy over laparotomy are more rapid access to the abdomen, shorter surgery, less blood loss, less extensive postoperative adhesions, faster recovery, and lower costs of hospitalization and rehabilitation. Laparotomy is performed only if laparoscopy is not possible for technical, logistic, or due other medical complications. The surgical treatment of tubal pregnancy consists either of an organ-preserving procedure or a salpingectomy [1,3,4,7,8].

The organ-preserving procedures include linear salpingotomy, trans-ampullary expression, or segmental resection. In a linear salpingotomy (opening of the tube directly over the pregnancy with a straight incision, made with a monopolar needle), surgical trauma to the tube must be held to a minimum. Segmental resection is indicated if a large tubal pregnancy has partly destroyed the ipsilateral tubal wall and the patient wishes to remain fertile even though the contralateral fallopian tube is diseased or absent [2,4,5,7,9]

The determination whether organ-preserving surgery is possible in the individual case is based on the intensity of bleeding, the size of the tubal pregnancy, the degree of damage to the affected and contralateral fallopian tubes, any prior history of infertility, any prior tubal pregnancy, the patient's wishes about future fertility and the availability of assisted reproductive technology [1,3,5,7,8]

Salpingectomy involved stepwise desiccation at the mesosalpinx with bipolar electrocoagulation with subsequent incision from the mesosalpinx to the tubal isthmus utilizing either scissors or an ultrasonic scalpel. The entirety of the tube 0.5-1 cm from the uterine cornua is excised, avoiding uterine injury [6,8,9]

The medical treatment of tubal pregnancy is an acceptable option only for very strict indications, and only when the patient can be safely expected to comply with the physician's recommendations. Its action is based on the inhibition of DNA synthesis at various stages of the cell cycle and, in consequence, the death of rapidly dividing cells including trophoblast cells [1,3,6]

Although the efficacy of methotrexate in the treatment of ectopic pregnancy reaches approximately between 70 and 90%, the success rate of methotrexate treatment is variably reported in the literature, because of heterogeneity of patient groups and inclusion criteria, differences in methotrexate treatment protocols, and varying definitions of treatment response [1,2,6,8].

The use of methotrexate requires specific conditions, both regarding the general condition of the patient and the characteristic features of the ectopic pregnancy. For the patient to be qualified for the methotrexate treatment, neither symptoms indicating hemodynamic failure nor several other symptoms concomitant with fallopian tube rupture can be present. Furthermore, the coexistence of clinically significant liver or

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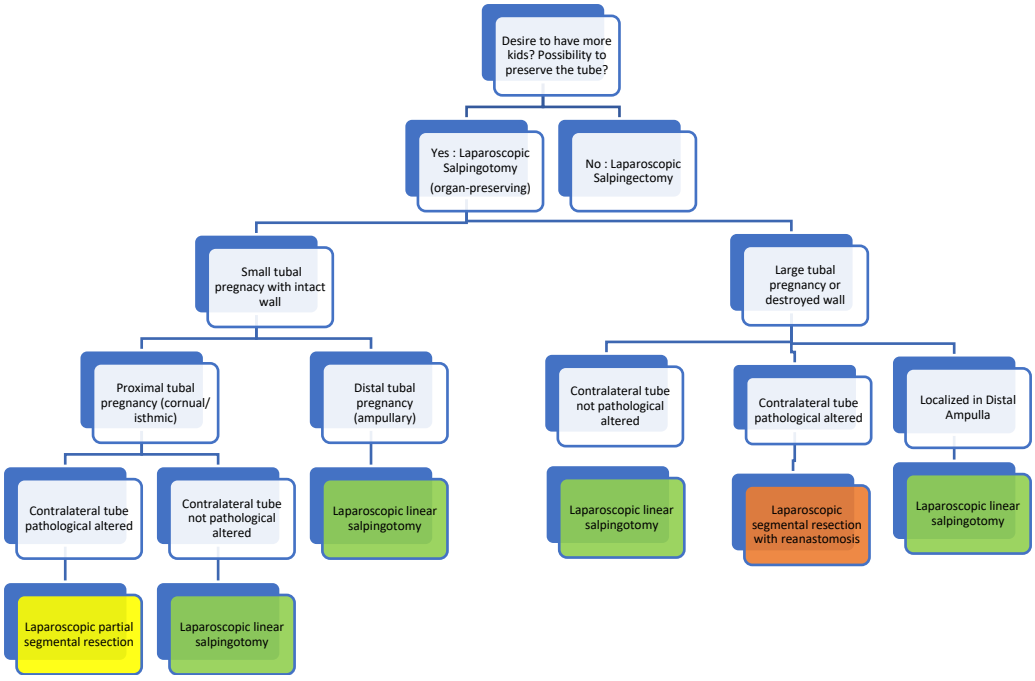
renal diseases, bone marrow dyscrasias, immunodeficiency, peptic ulcer disease, breastfeeding and the coexisting intrauterine pregnancy excludes the administration of methotrexate to patients due to the elevated risk of developing adverse reactions [1,5,6,8]

This drug has proven useful mainly in the treatment of persistent trophoblastic tissue or persistently elevated hCG values after conservative surgery. The two most common protocols are the single-dose and the multi-dose protocol. Majority of the studies revealed an that the multi-dose protocol was successful significantly more often than the single-dose protocol.

Ectopic pregnancies can also be located in the ovary, interstitially in the intra-myometrial portion of the fallopian tube, in the uterine horn, in the cervix, in the scar from a prior cesarean section, intramurally and in the abdominal space. Non-tubal extrauterine pregnancies can pose a diagnostic and therapeutic challenge and are associated with higher morbidity. These are very rare conditions and may necessitate a combined therapeutic approach involving both surgery and local drug application.



Picture1. Criteria for consideration in case of diagnostic of tubal ectopic pregnancy for the correct surgical approach.

Conclusion.

Therapeutic methods used in this pathology include both pharmacotherapy and a wide range of surgical techniques. Many gynecologists prefer laparoscopic salpingectomy over salpingotomy in the presence of a macroscopically healthy contralateral fallopian tube for management of the ectopic pregnancy. This preference

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is based on a small risk of bleeding and persistent gestational trophoblastic disease in the postoperative period. In addition, many clinicians would prefer a more rapidly performed salpingectomy in large part because they find mastering this procedure to be simpler and hemostasis is easily achieved during salpingectomy.

While salpingotomy provides the great advantage of fallopian tube preservation, several studies have indicated that this procedure did not ultimately improve fertility over long periods of time. Possible causes include existing oviduct inflammation and tubal damage by bipolar electric coagulation during surgery. Further research is needed to determine whether restoration of tubal function following salpingotomy can be effectively achieved.

There is no significant difference in fertility rates after surgical approach or drug treatment. The results can be biased also because there is a lack of substantial information in any of the published studies about the type of organ-preserving surgery that was performed and the comparison to type of methotrexate protocol used, or the duration and quality of the follow-up after the management of ectopic pregnancy.

To summarize there is no single effective treatment for ectopic pregnancy. The appropriate management depends on its location and the patient's condition and wishes.

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