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THE ROLE OF THE COMBINED USE OF FOAM HYSTEROSALPINGOSONOGRAPHY AND DIAGNOSTIC LAPAROSCOPY IN CHOOSING TREATMENT TACTICS IN PATIENTS WITH IDIOPATHIC INFERTILITY

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ABSTRACT

Background. *The mutually exclusive use of such diagnostic methods like HyFoSy and DL has long been established in patients with idiopathic infertility. However, more and more reproductive specialists have recently been inclined to use them together in order to improve outcomes of IUI.*

Objectives. *investigate the combined practical application of HyFoSy and DL to improve IUI outcomes in patients with II and ONMT.*

Materials and methods. *retrospective study was conducted at the Department of Reproductive Medicine, AIMS Medical Clinic, Addu, Maldives. 47 women with idiopathic infertility referred for intrauterine insemination between 2021 and 2024 and 48 women with unilateral fallopian tube occlusion who underwent DL and HyFoSy were analyzed.*

Conclusions. *the tendencies revealed by us indicate a possible benefit of combined performance of HyFoSy and DL in patients suffering from II and ONMT, which requires further research in this direction.*

Key words: idiopathic infertility (II), foam ultrasound hysterosalpingography (HyFoSy), diagnostic laparoscopy, intrauterine insemination (IUI), in vitro fertilization (IVF).

INTRODUCTION

Since the introduction of transvaginal ultrasound in the 1980s, qualitative progress has been made in the visualization of the pelvic organs, making it possible to evaluate in detail the uterus, ovaries and, most importantly, the patency of the

fallopian tubes. The criterion for fallopian tube patency is the presence of contrast agent around the ovaries and in the Douglas space. Deichert was the first in 1988 to report ultrasonographic testing of fallopian tube patency (hysterosalpingo-contrast sonography) using an echogenic contrast agent (Echovist) ® [6; 910-913-page]. In the following years, various echogenic contrast agents have been developed and introduced into widespread use to improve the quality of visualization. Typically, these contrast agents consisted of gaseous microbubbles encapsulated in a sheath material (e.g., lipids, proteins, or biopolymers) causing a very strong acoustic response to the frequency of the ultrasound beam, producing a characteristic enhanced echo signal. Diagnostic laparoscopy with dye test (also known as chromopertubation) is considered the clinical reference test for the diagnosis of fallopian tube pathology [10; 909-913-page]. The advantage of laparoscopy is the possibility of one-stage treatment of pathologic findings detected during its performance. On the other hand, this procedure requires general anesthesia and surgical equipment. It is usually performed in a day hospital, so it is more expensive, time-consuming, and associated with the risk of serious complications (damage to internal organs, intra-abdominal bleeding, and risks associated with general anesthesia) compared to such a method of diagnosing fallopian tube patency as HyFoSy performed in an outpatient clinic.

Aims of the study. To further improve the combined practical application of HyFoSy and DL to improve IUI outcomes in patients with II and ONMT.

Materials and Methods of the Study. This retrospective study was conducted at the Reproductive Medicine Department, AIMS medical clinic, Addu, Maldives. We studied 47 case histories of II patients who underwent IUI from 2021 to 2024 inclusive and 48 case histories of ONMT patients during the same period. We used instrumental (HyFoSy and DL) and statistical methods of research to solve the tasks we set ourselves.

In the course of the study, we studied and analyzed:

1. the results of DL and HyFoSy in patients with II prior to IUI;

2. the results of DL and HyFoSy in patients with ONMT before the IUI procedure;

The reliability of the obtained results is substantiated by the fact that in the course of the work, we took as a basis modern scientific and practical ideas and approaches in the diagnosis and treatment of infertility in patients with ONMT and II. Statistical conclusions were made on the basis of using various modern mathematical methods of statistical analysis, including Odds Estimation and ROC analysis.

Scientific and practical significance of the results of the study. The scientific significance of the results of this work is determined by the fact that the results and conclusions obtained in the course of this work have their theoretical and practical significance and can provide worthy assistance to physicians involved in the treatment of female infertility.

While performing this work we noted that:

1) performing DL in patients with II and normal results of HyFoSy, allowed to reveal the presence of some pathology in 16 (35%) of 47 patients. At the same time, the results of DL did not change the initial treatment tactics (IUI) in 12 (75%) patients;

2) DL in patients with II resulted in "radical" change of treatment tactics (IVF) in 4 out of 16 (25%) patients and "correction" of treatment tactics (laparoscopic correction + IUI) in 12 out of 16 (75%) patients who had normal results of HyFoSy and bilateral pathology according to DL results;

3) DL in patients with ONMT led to a "radical" change of treatment tactics (IVF) in 22 (45%) out of 48 patients;

Our retrospective data suggest that DL may be of significant value, even after routine HyFoSy with normal results. Therefore, we recommend routine performance of diagnostic and/or therapeutic laparoscopy after several failed IUI attempts in patients with normal HyFoSy results. Also, we believe that it is appropriate to perform DL in patients with TNMT detected during HyFoSy, as our results showed that performing DL in a relatively high percentage of cases (45%) led to abandonment of IUI and conversion to IVF.

Conclusions. A rather small statistical sample of patients included in the study does not allow us to draw final conclusions regarding the necessity of mandatory DL in all patients suffering from IB and ONMT. However, the tendencies revealed by us indicate a possible benefit of combined performance of HyFoSy and DL in patients suffering from II and ONMT, which requires further research in this direction.

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