

Review

By Assoc. Prof. Dr. Nikolay Dimitrov Kolev, PhD
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Regarding:

Dissertation for awarding the educational and scientific degree "Doctor," scientific specialty Obstetrics and Gynaecology (03.01.45), Department of Obstetrics and Gynaecology, Medical University – Varna.

Title of the dissertation:

"Prophylactic Ultrasound Examination – Method for Detection of Asymptomatic Pathologies in Gynaecology"

Author of the dissertation: Dr. Vilislava Robert Ivanova

Scientific supervisor: Prof. Dr. Emil Georgiev Kovachev, DSc

The dissertation submitted for defense contains a total of 116 standard pages, illustrated with 27 tables and 5 figures.

The bibliography includes 228 references.

In her research, Dr. Ivanova addresses a contemporary issue of significant medical and social importance. Gynaecological diseases affect millions of women worldwide, greatly impacting their reproductive health. Early and accurate diagnosis is crucial for effective treatment and improved outcomes. Ultrasound technology has revolutionized the field of gynaecology, allowing physicians to visualize and diagnose various conditions with remarkable precision. This non-invasive and painless procedure uses sound waves to create images of the pelvic organs.

One of the main advantages of ultrasound is its ability to provide real-time imaging, enabling gynaecologists to monitor the pelvic organs in motion. This capability for dynamic imaging is particularly useful for assessing the function and positioning of the uterus and ovaries. Additionally, ultrasound is a widely accessible, safe, and cost-effective imaging method. It does not use ionizing radiation, making it suitable for repeated examinations and follow-up assessments.

The review of the literature clearly shows that the doctoral candidate has thoroughly examined a wide range of contemporary literary sources. The review holds significant educational value.

Aim of the study: To investigate the diagnostic value of pathological ultrasound findings in the female reproductive system in asymptomatic and symptomatic women.

The objectives of the dissertation are clearly formulated and include six tasks:

1. To analyze the frequency of gynaecological diseases diagnosed through transvaginal ultrasonography (TVS), with or without clinical symptoms.
2. To track the frequency of specific complaints among patients.
3. To study the age distribution of patients with gynaecological diseases.
4. To examine the frequency of past diseases and surgical interventions in patients with gynaecological diseases.
5. To analyze the frequency of comorbidities in patients with gynaecological diseases.
6. To establish the relationship between the identified gynaecological diseases in patients and the method of childbirth.

Materials and Methods

A retrospective study was conducted on 564 patients who visited SBAGAL "Prof. Dr. D. Stamatov" EOOD – Varna during the period from September 1, 2020, to September 30, 2022. The patients underwent a preventive examination. Dr. Ivanova clearly formulated the inclusion and exclusion criteria for the study.

To achieve the set objectives, Dr. Ivanova primarily used ultrasound methods, along with detailed medical history collection. A variety of statistical methods were also applied to analyze the data

The doctoral candidate analyzed the diagnostic value of transvaginal ultrasonography (TVU) in detecting pathological findings in the female reproductive system among asymptomatic and symptomatic women of various ages. A retrospective clinical study was conducted on a total of 564 patients aged between 22 and 86 years.

Three significantly more common gynaecological conditions were identified, which require timely therapeutic intervention: uterine fibroids, endometrial polyps, and adnexal formations. The number and relative proportion of asymptomatic cases were significantly higher, proving the importance of preventive examinations. The difference between these women and those with clinical symptoms, particularly in cases of uterine fibroids, was statistically significant ($t=6.541$; $p<0.001$). The age group between 40 and 49 years was significantly predominant in the study cohort. There was also a statistically significant correlation between the ultrasound findings and the age of the patients (Pearson's $\chi^2=12.348$; $p=0.03$).

Using transvaginal ultrasonography (TVU), a total of 15 other gynaecological conditions were diagnosed, the most common of which were cysts on the right and left ovaries, as well as polycystic ovary syndrome.

A statistically significant correlation was established between symptomatic and asymptomatic patients and the diagnosis of the three most frequently diagnosed conditions (Pearson's $\chi^2 = 25.928$; $p < 0.0001$). A total of 26 comorbid conditions were identified in 60 patients (10.64% of cases). Arterial hypertension was the most common, found in 26 women. Comorbidities were found in 21 patients who underwent TVU (12.88%), 32 patients (7.98% of cases) without this imaging examination, and 53 patients in total (9.40% of cases). The correlation between comorbidities and pathological findings from TVU was not statistically significant (Pearson's $\chi^2 = 3.273$; $p = 0.07$).

Based on the large empirical data, it was convincingly demonstrated that ultrasonography is the most effective method for the prevention of gynaecological diseases.

Evaluation of Conclusions and Contributions

In her work, Dr. Ivanova formulates 5 conclusions, 1 original contribution, and 4 confirmatory contributions. She has published 3 papers related to the topic of the dissertation. It is particularly important to highlight the contributions, specifically:

1. For the first time in Bulgaria, a regional preventive ultrasound examination of women with gynaecological diseases has been conducted.
2. By analyzing the literature data and our own results, we confirmed the effectiveness of TVU in women with and without symptoms of gynaecological diseases.
3. We demonstrated the significant diagnostic value of the imaging method in the examination of patients with and without symptoms of gynaecological diseases.

4. We confirmed the high frequency of specific current and past gynaecological diseases and complaints in women.
5. We visualized a significant frequency of a large number of comorbid conditions in patients with gynaecological pathology.

Critical Remarks and Advice

Dr. Ivanova has taken into account previously made critical remarks.

Teaching Activity

Dr. Vilislava Robert Ivanova was born in 1983 in Varna. She completed her secondary education at the V Foreign Language High School "Joan Exarch" with a focus on French. In 2012, she graduated from the Medical University of Varna with a degree in Medicine. Since 2013, she has been a resident in Obstetrics and Gynaecology at the Medical University of Varna, with training based at the SBAGAL – Varna. She obtained her specialization in Obstetrics and Gynaecology in 2019. After successfully passing a competition in 2016, she became an Assistant Professor in the Department of Obstetrics and Gynaecology. Dr. Ivanova has held the positions of Assistant in the Department of Obstetrics and Gynaecology at the Medical University of Varna and Obstetrician-Gynaecologist at SBAGAL - Varna, Department of "Delivery" from 2016 to 2024. Dr. Vilislava Ivanova is fluent in written and spoken English, German, and French. She is a member of: Bulgarian Medical Union (BLS), Bulgarian Association of Obstetrics and Gynaecology (BAMIGH), International Society of Ultrasound in Obstetrics and Gynaecology (ISOUg), Bulgarian Association of Urogynaecologists (BAUG), Bulgarian Society of Obstetrics and Gynaecology (BSOG).

Conclusion

The presented dissertation by Dr. Vilislava Robert Ivanova, titled "Preventive Ultrasound Examination -Method for Detecting of Asymptomatic Pathologies in Gynaecology," is both relevant and meets accepted standards. I would like to recommend that the esteemed members of the Scientific Jury vote positively for the award of the academic and educational degree of 'Doctor ' in the scientific specialty of "Obstetrics and Gynaecology" to Dr. Vilislava Robert Ivanova, according to the Rules for the Development of Academic Staff at the Medical University of Varna.

Date: September 17, 2024

Prepared by:

Заличено на основание чл. 5,
§1, б. „В“ от Регламент (ЕС)
2016/679

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