

## REVIEW

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Regarding the dissertation work for awarding the scientific and educational degree "Doctor", scientific specialty Obstetrics and Gynecology (03.01.45), Department of Obstetrics and Gynecology, Medical University - Varna.

Dissertation topic: "Diagnostic approaches and clinical management in hydronephrosis during pregnancy"

Author of the dissertation - Dr. Zlatka Georgieva Dimitrova - Sandulova

Scientific supervisors: Assoc. Prof. Kremen Cvetkov, MD, PhD and Assoc. Prof. Tosho Ganev, MD, PhD

The dissertation submitted to be defended contains a total of 135 standard pages and it is illustrated with 41 tables and 24 figures.

The bibliographic reference contains 286 literary sources, of which 17 are in Cyrillic and 269 are in Latin.

Actuality of the dissertation

In her dissertation thesis, Dr. Dimitrova examines a contemporary-problem of medico-social importance. Hydronephrosis in pregnant women, also called gestational hydronephrosis, is often associated with a urinary tract infection. It is estimated that about 90% of pregnant women suffer from some form of hydronephrosis. With the increase in the incidence of chronic kidney disease and the tendency for women to plan and become pregnant at a later age, the control of kidney disease during pregnancy is increasing the chance to visits to nephrologists, urologists and obstetricians. Women with renal impairment and pregnancy face several challenges, due to the increased physiologic demands on the kidney and the risk of disease progression, the potential teratogenicity of drugs, and the increased risk of complications such as preeclampsia and preterm birth. The challenges posed by the underlying disease process during pregnancy require an interdisciplinary team to ensure good outcomes for the mother and the fetus.

A review of the literature survey clearly shows that the PhD student has thoroughly studied a variety of contemporary literary sources. The review has good educational value.

The aim of the study was to compare diagnostic approaches and to investigate clinical management in pregnant women with hydronephrosis in the first and second half of pregnancy.

The objectives of the dissertation study are clearly formulated and namely 7, listed here below:

1. To study the Bulgarian and foreign literature on modern trends in the diagnostic and treatment management of hydronephrosis during pregnancy.
2. To perform a prospective and retrospective analysis of a group of patients with symptomatic hydronephrosis, diagnosed and treated in the Department of Pathological Pregnancy at SBAGAL "Prof. Dr. D. Stamatov" city of Varna and Urology Clinic at the MHAT "St. Anna" in the city of Varna for the period 2019-2021 with the aim of creating current complex diagnostic and therapeutic algorithm.
3. To clarify the effectiveness of the diagnostic methods used in the practice of obstetricians and gynecologists and urologists during the first half of pregnancy
4. To evaluate the effectiveness of the diagnostic methods used in the practice of obstetricians and gynecologists and urologists during the second half of pregnancy
5. To specify the indications, used treatment methods and complications during the first half of pregnancy
6. To systematize the indications, used treatment methods and complications in the second half of pregnancy
7. To compose and propose an approach for algorithm in hydronephrosis during pregnancy.

#### Material and methods

To fulfill the purpose and objectives of the dissertation, a retrospective and prospective clinical study was conducted for the period of 2019 until 2021. The study includes 184 pregnant patients with evidence of symptomatic hydronephrosis, hospitalized in the "Pregnancy Pathology" department at SBAGAL "Prof. Dr. D. Stamatov" - Varna and "Urology" clinic at the MHAT "St. Anna" - Varna. The collected data used is: available in digital database, discharge summary, histories of diseases, operational journals.

Dr. Dimitrova used the following methods to perform the assigned tasks:

- Statistical methods
- Demographic characteristics
- Diagnostic methods – history of the patient, physical status, laboratory tests, microbiological tests
- Imaging methods
- Therapeutic methods - conservative and operative treatment

#### Own results and discussion

Screening and pregnancy monitoring for upper urinary tract obstruction is recommended between 12-22 g.w. to reducing the frequency of complications of both hydronephrosis and pregnancy mother. Symptomatic hydronephrosis must be treated as a matter of urgency and with timely treatment in more than 85% of pregnant women, the condition is successfully treated conservatively. In diagnostic terms, apart from clinical data, the results of laboratory tests are important - FBC, CRP and nitrogen bodies, in combination with ultrasound, are the main guide for choosing the appropriate treatment method. In the case of conservative treatment, the use of analgesics and antibiotics combined with tocolysis/spasmolysis is most often required, with a greater success rate in patients diagnosed with unilateral hydronephrosis. In surgical treatment, the method of choice is retrograde urethral stenting, which is more often applied in the second half of pregnancy and bilateral symptomatic hydronephrosis.

#### Evaluation of conclusions and contributions

In her development, Dr. Dimitrova formulated 9 conclusions and 7 contributions, and I want to emphasize the original contributions, namely:

1. Symptomatic hydronephrosis in pregnant women was studied and analyzed for the first time in Bulgaria.
2. An original diagnostic and treatment algorithm for pregnant women with hydronephrosis has been developed with the possibility of wide application in medical practice.

#### Critical notes and advice

Dr. Dimitrova complied with all the previously made critical notes and correctly noted in the bibliography some Bulgarian developments in this direction.

#### Teaching and learning activity

Dr. Zlatka Dimitrova is born on 20.01.1982. in Stara Zagora. She completed his secondary education at the PMG "Geo Milev" Stara Zagora in 2000. Dr. Dimitrova completed her higher education in medicine in 2007 at the Medical University "Prof. Dr. P. Stoyanov" Varna. She started working in 2007, as a resident doctor at Emergency medical center, Stara Zagora. In 2017 she acquired the specialty "Obstetrics and Gynecology". From 2016 to the present, Dr. Dimitrova works at SBAGAL "Prof. Dr. D. Stamatov" Varna, Department of Pathological Pregnancy. In 2017, after a contest, she was selected as an assistant at the Department of Obstetrics and Gynecology. Dr. Dimitrova completed additional qualification courses in the field of: abdominal ultrasound, colposcopy and destructive treatment of pre-cancers of the cervix, ultrasound diagnostics in obstetrics and gynecology practice and fetal morphology. Author of reports and publications related to the dissertation topic. Member of: BLS, BDAG, ISUOG

#### Conclusion

The presented dissertation of Dr. Dimitrova "Diagnostic approaches and clinical management in hydronephrosis during pregnancy" is up-to-date and meets the generally accepted criteria. I would like to recommend to the respected members of the Scientific Jury to vote positively for awarding the scientific and educational degree "Doctor" in the scientific specialty "Obstetrics and Gynecology" to Dr. Zlatka Dimitrova-Sandulova, according to the Regulations for the Development of the Academic Staff at the Medical University – Varna.

Date: 18.08.2022

Prof. Emil Georgiev Koyachev, MD, PhD, DSc

