

## OPINION

By Associate Professor Nadya Minkova Magunska, MD, Ph.D.

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On a dissertation for the award of an educational and scientific degree "Doctor"

Professional direction: 7.1 Medicine, field of higher education 7. Health care and sports

Scientific specialty: Obstetrics and gynecology

Author: Dr. Jeni Yordanova Panayotova

Form of doctoral studies: independent

Scientific organization: Medical University "Prof. Dr. Paraskev Stoyanov" - city of Varna

Dissertation topic: Modern ultrasound methods for diagnosis and behavior in placenta previa and placenta accreta

Scientific supervisor: Prof. Dr. Ivan Kostov, MD, Ph.D.

### General performance

The presented set of documents is in accordance with the Regulations for the acquisition of the educational and scientific degree "Doctor" at the Varna MU.

The dissertation work of Dr. Jeni Yordanova Panayotova submitted for official defense is written in literary Bulgarian language and is set out on 141 pages, illustrated with 42 figures, 18 graphs and 48 tables. The bibliographic reference includes 214 titles, of which 6 are in Cyrillic and 208 are in Latin. There are 4 publications related to the dissertation work.

## Timeliness of the problem

The problem presented for research by the dissertation is particularly relevant for modern clinical practice in the field of obstetrics. Given the high frequency of severe perinatal complications for both the mother and the fetus in placenta previa and placenta accreta conditions, the development of diagnostic markers and algorithms for their early diagnosis enables adequate and determined actions on the part of obstetricians monitoring and leading the birth - gynecologists. It is especially important to differentiate pregnant women at risk early on, which will enable them to be targeted and through proper treatment - reduced risks of complications. Considering the controversy regarding the performance of Caesarean section on request and extended indications, which has been going on in recent years among specialists in obstetrics and gynecology, consideration of its significance as a risk factor for the development of placenta previa and placenta accreta in subsequent pregnancies is of particular relevance.

## Literature review

The review of the literature sources related to the topic of the dissertation is spread over 34 pages. The analysis has been done thoroughly and precisely, the experience of leading teams, specialists and clinics in this field has been summarized. The cited sources from the last 10 years for nearly 30%, the inclusion of Bulgarian authors makes a good impression.

The overview is structured logically, it examines in detail all aspects of the ultrasound evaluation of the placenta - both the normal finding and the pathological deviations. Emphasis is placed on modern diagnostic achievements and capabilities of ultrasound. It is clear from the presentation that Dr. Panayotova knows the subject in detail and appreciates the literary material creatively. I believe that, presented in this way, it has significant cognitive value and can serve as a good basis for the development of the dissertation work.

## Purpose and tasks of the dissertation work

To determine the frequency, risk factors, ultrasound criteria, the accuracy of the ultrasound method and the optimal time for the diagnosis of placenta previa and placenta accreta during pregnancy, in order to create an adequate protocol of obstetric behavior, in the follow-up of pregnancies complicated by this placental pathology.



The implementation is based on 9 specific tasks. The tasks are numerous and their completion would be of great practical value, showing remarkable ambition and knowledge of the material.

I believe that the main objective, as well as the set tasks, are precisely and clearly formulated.

#### Materials and methods

A prospective study for the period from August 2013 to August 2016, including a routine visit of singleton pregnancy patients between 11-13 g.w., as part of routine pregnancy follow-up, at the Harris Birthright Research Center for Fetal Medicine, Kings' College Hospital, London, UK. The studied contingent is extensive – it covers 22,604 singleton pregnancies, with the presence of a live fetus and the mandatory size of the fetus between 45-84 mm. It makes a good impression that the study is entirely prospective, over a long period of 3 years. Used methods are clear and specific, well illustrated with illustrative material.

#### Results, conclusions and discussion.

Dr. Panayotova carried out a detailed and complete analysis of the obtained results, which she clearly and correctly presented in a table and visualized in a graphic form. I believe that there is particular value in determining the importance of Caesarean section and assisted reproduction methods regarding subsequent pregnancy complications such as placenta previa and placenta accreta. Both manipulations in modern medical practice are performed more and more often, therefore it is important to determine the risks associated with them. The doctoral student offers 9 conclusions directly derived from the results of the dissertation work. The conclusions that Dr. Panayotova makes have a high scientific and practical value, as they clearly define risk factors for placenta accreta such as: age, ethnic origin, pregnancy, parity, previous cesarean section and previous uterine surgery, and for placenta previa: age, method of conception, pregnancy, previous cesarean section, previous myomectomy and previous uterine surgery. Particularly valuable for practice and as results with an original contribution to the dissertation work are the created sample protocol for obstetric behavior in placenta accreta and a score system for diagnosis. The discussion of the obtained results is detailed, all ultrasound diagnostic markers are discussed in detail. Various perspectives and opinions from leading specialists in the field are included, supported by a rich body of research and publications.

## Contributions

The author's contributions are 11 in total, 3 of which are original in nature. I believe that the contributions of an original nature can be implemented in the daily practical activity of every obstetrician-gynecologist performing pregnancy follow-up and fetal morphology.

## Scientific activity

Dr. Panayotova has four scientific publications related to the topic of the dissertation, which were published in specialized medical publications in Bulgarian and in English.

I have no substantive criticisms. The presented dissertation is of high scientific value, accurately and correctly developed. It includes a large number of patients and is prospective in nature. In scientific practice, multicenter studies have a high value due to the reduction of the influence of the human factor. As a wish to Dr. Panayotova, I can make a proposal for expanding the contingent of female patients, by including other centers and future development of the topic, which I consider important for modern obstetric practice.

## Conclusion

Dr. Panayotova's work has all the necessary qualities of a dissertation due to the topicality of the problem, the logical structure, the reliable results and their reproducibility in clinical practice, the reliable conclusions and contributions of an original and confirmatory nature. I believe that the current dissertation work of Dr. Jeni Panayotova fully meets the scientometric criteria and the rules for academic development of the University of Varna for awarding the educational and scientific degree "doctor". As a member of the Scientific Jury, I responsibly and confidently give a positive assessment of the work reviewed by me.

Assoc. Dr. Nadia Magunska, MD, Ph.D.

