

OPINION

of dissertation and autoreferat on the topic

"Echocardiographic preoperative evaluation of patients with complete atrioventricular septal defect"

Presented by the National Cardiology Hospital for public defense to a scientific jury for awarding the scientific and educational degree "Doctor" in the doctoral program "Pediatric Cardiology", professional direction "Medicine", field of higher education - "Health and Sports".

Author: Dr. Zornitsa Nikolova Vasileva, assistant at National Cardiology Hospital, PhD student in self-study.

Scientific supervisor: Prof. Anna Kaneva, MD, PhD, National Cardiology Hospital

Prepared the opinion: Prof. Prof. Elina Trendafilova, MD, PhD, National Cardiology Hospital. Elected as a member of the Scientific Jury by order Order No 356/26.10.2022 and for preparing a statement on the thesis submitted 08.11.2022 by the members of the Scientific Jury, before which the public defense will be held.

Business address: Prof. Dr. Elina Trendafilova, PhD, National Cardiology Hospital

I have not found any violations in the documents attached by Dr. Z. Vasileva, the requirements of the Law on Scientific Research and Development of the Republic of Bulgaria have been met. I do not have a conflict of interest caused by my participation in the current scientific jury. I do not have shared scientific papers with the doctoral student among those presented for the thesis.

Data from the professional biography:

Dr. Zornitsa Vasileva graduated in medicine in 2005, since 2019 and currently works as a doctor at the Pediatric Cardiology Clinic of the National Cardiology Hospital - Sofia, has a specialty in pediatric cardiology, as well as certificates for echocardiography in childhood, fetal echocardiography, and European certificate for echocardiography in congenital heart diseases. Since 2020 she is a PhD student of independent training in the specialty " Pediatric Cardiology". Dr. Vassileva is a respected and erudite pediatric cardiologist with a strong interest in echocardiography, with clinical, organizational and teaching experience.

Assessment of the submitted dissertation:

The problem presented for study by Dr. Vassileva is extremely relevant to the modern theory and practice in pediatric cardiology in the context of the constantly improving diagnostic non-invasive and invasive research methods, surgical and interventional techniques, modern drug therapy of pulmonary arterial hypertension and the increased life expectancy of children with VSM. In the literature, the problem of precise balance determination has not yet been solved and there is no developed algorithm that allows a reliable distinction between balanced and unbalanced forms of AVSD and the choice of correct operational correction.

The dissertation is presented on 148 standard pages, includes 36 tables and 38 figures. The bibliography is completely contemporary and contains 142 literary sources, of which 10 in Cyrillic. The autoreferate is presented on 99 pages and meets the requirements of the Scientific Organization at the National Cardiology Hospital. The dissertation was discussed and approved for public defense by the Primary Research Unit at the Clinic of Pediatric Cardiology on 26.09.2022.

The review is modern, detailed, logically constructed logically and presented on 49 pages, describes the main characteristics of AVSD, prognosis and surgical treatment, as well as the role of echocardiography in the process of diagnosis, prognostics and follow-up, a review of the literature on the topic is made, and the questions that are waiting for their answer are clearly defined.

The aim of the dissertation is on the basis of a detailed and standardized preoperative echocardiographic assessment of the AVSD, including systematic measurements of predefined parameters, to develop an algorithm for reliably distinguishing between balanced and unbalanced forms. The five main tasks are well formulated and meet the set goal. Statistical methods are modern and correctly used, a large number of parameters have been analyzed, which allows clear and specific conclusions to be drawn.

The material and methods correspond to the set goals and objectives and are correctly selected. The data of 100 children - retrospectively 64 and prospectively in 36 patients with AVSD operated in the Clinic of Pediatric Cardiology of the National Cardiology Hospital from 2014 to 2021 were analyzed, the inclusion and exclusion criteria were clearly selected. Multiple clinical and echocardiographic parameters were analyzed, the clinical outcome was followed up to day 30 after the last operative intervention. The material is well arranged and visualized.

The results are presented on 63 pages. Demographic characteristics and clinical outcome of patients were analyzed. In the retrospective group, 8 main echocardiographic indicators were studied and a model of 3 parameters was derived that discriminates between the balanced from the unbalanced appearance of the AVSD. The analyses were repeated in the prospective group of 36 patients, forming a score-score of 4 echocardiographic indicators with good sensitivity and specificity, conveniently collected in an Internet-based automated calculation system.

The conclusions are 5 in number, logically and correctly formulated, follow the data from the results and the statistical analysis.

Thesis contributions:

The dissertation clearly defines the leading importance of echocardiographic parameters for distinguishing balanced from unbalanced type of AVSD, which is essential for determining the operational approach.

The contributions of the dissertation are 5 and are both confirmatory and original in nature. I agree with their content. For the first time in Bulgaria, echocardiographic and demographic data are summarized in a large group of children with AVSD and the early postoperative outcome is followed. A discriminative model of 4 routine and easy-to-perform echocardiographic parameters was derived to discriminate between a balanced from an unbalanced defect type with good sensitivity and specificity.

Particularly valuable is the proposed automated score-system for evaluation, which is a prerequisite for the wide practical application of the dissertation.

Publications on the topic of the dissertation:

Dr. Vassileva presents 3 publications in full text in peer-reviewed journals.

Critical remarks: There are no abstracts from participation in congresses in Bulgaria and abroad, as Dr. Vassileva has and which prove the positive assessment of the scientific community for the dissertation.

In conclusion:

The dissertation of Dr. Vassileva "Echocardiographic preoperative assessment of patients with complete atrioventricular septal defect" is a topical and scientifically supported study on the possibilities of preoperative echocardiography to discriminate balanced from unbalanced type of AVSD and to determine the correct surgical treatment. The derived model of 4 routine echocardiographic parameters and the automated score-system determine the original and great scientific and practical importance of the dissertation.

I strongly recommend to the members of the Scientific Jury to positively evaluate the dissertation "Echocardiographic preoperative assessment of patients with complete atrioventricular septal defect" and awarded Dr. Zornitsa Vasileva with the scientific and educational degree "Doctor" in the doctoral program "Pediatric Cardiology", professional field "Medicine", field of higher education "Health and Sport".

15.01.2023

Sofia

Prepared the opinion:



/prof. Dr. Elina Trendafilova, MD, PhD/