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מומחה מילדות גניקולוגיה ופריון

01.09.25

REVIEW OF THE SCIENTIFIC CONSULTANT

on the dissertation submitted by
Anastassiya Nikolaevna Rybina

"Personalized approach to overcoming infertility in women of advanced reproductive age" for the degree of Doctor of Philosophy (PhD)

Specialty: 8D10103 – Medicine

The dissertation is devoted to one of the most urgent problems of modern reproductive medicine — infertility in women of advanced reproductive age. The topic is highly relevant both scientifically and socially, as the number of such patients is steadily increasing worldwide, and effective solutions are in great demand.

In her work, the doctoral candidate relies on modern concepts of personalized medicine and applies a comprehensive methodology, including molecular genetic analysis of MTHFR, MTR, MTRR and FSHR polymorphisms, preimplantation genetic testing, embryo morphokinetics, and immunohistochemistry of the endometrium. Such an integrated approach ensures the scientific validity of the research.

The main results of the dissertation are of significant scientific and clinical value. For the first time in the Kazakh population, associations between unfavorable gene polymorphisms and IVF outcomes were demonstrated. It was shown that 90% of patients carried at least one unfavorable genetic variant, which was associated with reduced blastocyst formation and increased embryo aneuploidy rates up to 72%. Importantly, the proposed personalized algorithm of preparation improved IVF outcomes: pregnancy rates increased to 41%, live birth rates to 34% compared with 19% in standard protocols, while pregnancy loss decreased from 42% to 18%. These results are statistically reliable and clinically meaningful.

The dissertation is well-structured and logically consistent, with a clear link between objectives, methods, results, and conclusions. It demonstrates scientific integrity and coherence throughout all sections.

The personal contribution of the doctoral candidate is substantial. She performed patient recruitment, laboratory genetic testing, clinical follow-up,

statistical analysis, and implementation of the obtained results into clinical practice. The scope and depth of independent work are considerable.

The author has shown strong analytical skills, proficiency in modern laboratory and statistical methods, and the ability to work independently as a researcher. The results of the study have been published in peer-reviewed journals, including Scopus-indexed publications, which highlights the scientific value and international recognition of the work.

Overall, the dissertation of Anastasiya N. Rybina is an original, scientifically sound, and practically significant research project that fully meets the requirements for a PhD thesis in Medicine. I strongly recommend the dissertation for public defense and the award of the PhD degree.

MD, PhD,

Professor Adrian Ellenbogen

(Signature)

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