

Recommendation for Dr. Akkerbez Adilbekova – PhD candidate

Dear Examination Committee members,

It is my great pleasure to provide letter of support to Dr. Akkerbez Adilbekova to whom I served as an external scientific advisor during her Ph.D. tenure.

During her studies, Dr. Adilbekova investigated clinical, epidemiological and prognostic factors in the treatment of the ventricular septal defects in the children in Kazakhstan. The main purpose of her study was to evaluate of the effectiveness of surgical methods of treatment of the ventricular septal defects. In her work, Akkerbez showed that each operation has its pros and cons, in addition, she described in detail the minimally invasive operation. The hybrid method is a minimally invasive ventricular septal defect (VSD) closure on a beating heart. The advantages are shortening the duration of the hospitalization, rehabilitation, no X-ray exposure, and good cosmetic effects. This is the first study, to our knowledge, in Central Asia that demonstrates the hybrid method is equally effective as the traditional method for infants through 18-year-old patients. Although the hybrid method has been widely used in China and some European countries since 2000. Specifically, she found that the hybrid operation for ventricular septal defect without the cardiopulmonary bypass is plain, and effective which accompanies minimal surgical trauma, and relatively safeguard options for selected patients with isolated VSD, in contrast to the classical method. The hybrid operation not only reduces the risk of significant complications and blood product transfusion, but also shortens the duration of hospitalization, and rehabilitation compared with the traditional method with the cardiopulmonary bypass but also produces no inferior results compared with the interventional method in selected isolated VSD patients. Moreover, this method is technically not a complex operation compared to the traditional method. Her Ph.D. study is in compliance with the logical scientific approach towards objectives and goals of research. The outcomes of her study are justified and recommendations may have practical significance, which may be useful in future, management of patients according to their individual characteristics. These conclusions correspond to the principles of personalized medicine, which currently is the foremost trend in the healthcare system.

Akkerbez is a highly motivated and talented scientist that has expressed extraordinary learning and scientific abilities. She showed high ability to analyze a large number of literary resources on the subject of the research. Her research is resulted in a scientific peer-reviewed publication in a high impact journal (Adilbekova et al., *Congenital Heart Disease*, 2023; *JTCVS Techniques*, 2024). In

addition, Akkerbez presented her work in several international scientific conferences.

Throughout the course of the research work, Akkerbez has demonstrated that she is an independent, responsible and mature researcher who is able to face scientific and practical challenges independently. During her training in our hospital Fuwai in China, my colleagues and I found her hard working, intellectually curious and diligent in state of the art scientific methodological approaches.

Based on the above, I believe that Dr. Akkerbez Adilbekova's Ph.D. thesis entitled «Clinical, epidemiological and prognostic factors in the treatment of the ventricular septal defects of the heart in the children in Kazakhstan» is devoted to the matter of current interest in the pediatric cardiac surgery, cardiology and I strongly recommended to grant her a Ph.D. degree.

Sincerely,

Dr. Pan Xiangbin



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