



TITLE: Preoperative diagnosis of periprosthetic joint infections of the hip and knee. Which diagnostic algorithm of PJI to choose?

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ABSTRACT (up to 300 words)

Relevance. Nowadays, according to the foreign and native registers, the number of patients with periprosthetic infection (PJI) tend to increase. The early diagnosis of PJI allows to provide an timely treatment and, consequently, to avoid additional physical, financial and emotional expenditure. There are several diagnostic algorithms to PJI in the world. The objective of the study is to identify the most accurate, affordable and easy-to-use diagnostic algorithm used at the preoperative stage. **Materials and methods.** A post-hoc analysis of 242 endoprosthetic revisions, held at FSFI FCTOE, was carried out. According to the study design, 127 medical cases are included in this study. The diagnosis of PJI was made by three diagnostic algorithms: ICM (International Consensus Meeting 2018), WAIOT (The World Association against Infection in Orthopedics and Trauma), EBJIS (The European Bone and Joint Infection Society 2018). The presence of the infection was derived from bacteriological examination of aspirate of synovial fluid, intraoperative biopsy materials and explanted endoprosthesis's components (sonication fluid). Due to the presence of the result "not convincing" in the diagnostic algorithm ICM, the evaluation of the outcomes was made with 2 variants: "not convincing=no infection", "not convincing=infection".

Research results. The highest measurement of common accuracy, that the diagnostic algorithm ICM 2018 "not convincing=infection" has, is

91.3%, with the measurements of sensibility and specificity of 89.3% and 93.0% respectively. The best specificity was shown by the algorithms WAIOT and ICM ("not convincing=no infection") – 95.8%, the measurements of sensibility and common accuracy 80.4% and 89.0% respectively. The sensibility and specificity of the algorithm EBJIS were 87.5% and 84.5%, respectively, the common accuracy was 85.8%. **Conclusion.** The diagnostic algorithm ICM (International Consensus Meeting 2018), providing that "not convincing=infection", showed the highest common accuracy.

BIOGRAPHY (upto 200 words)

Dr. Dmitry Kazantsev was born in Barnaul, Russian Federation and is a graduate of Altai State Medical University. His residency is at The Federal State Financed Institution "The Federal Center of Traumatology, Orthopedics and Endoprosthetics" of the Ministry of Health of the Russian Federation (Barnaul).

Dr. Dmitry Kazantsev has five years' experience in orthopedic surgery, with special interest in periprosthetic joint infections of the hip and knee.

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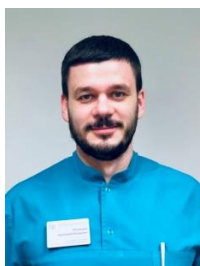


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