



# Histopathological Diagnosis of Prosthetic Joint Infection: Does a Threshold of 23 Neutrophils Do Better than Classification of the Periprosthetic Membrane in a Prospective Multicenter Study?

Submitted by Beatrice Guillaumat on Thu, 12/13/2018 - 11:53

**Titre** Histopathological Diagnosis of Prosthetic Joint Infection: Does a Threshold of 23 Neutrophils Do Better than Classification of the Periprosthetic Membrane in a Prospective Multicenter Study?

**Type de publication** Article de revue

**Auteur** Bémer, Pascale [1], Léger, Julie [2], Milin, Serge [3], Plouzeau, Chloé [4], Valentin, Anne Sophie [5], Stock, Nathalie [6], Jolivet-Gougeon, Anne [7], Moreau, Anne [8], Corvec, Stéphane [9], Quintin-Roue, Isabelle [10], Tande, Didier [11], Héry-Arnaud, Genevieve [12], Rousselet, Marie-Christine [13], Lemarié, Carole [14], Kempf, Marie [15], Michenet, Patrick [16], Bret, Laurent [17], de Pinieux, Gonzague [18], Burucoa, Christophe [19]

**Organisme** CRIOGO (Centre de Référence des Infections Ostéo-articulaires du Grand Ouest) Study Team, [20]

**Editeur** American Society for Microbiology

**Type** Article scientifique dans une revue à comité de lecture

**Année** 2018

**Langue** Anglais

**Date** 05 Juillet 2018

**Pagination** e00536-18

**Volume** 56

**Titre de la revue** Journal of clinical microbiology

**ISSN** 1098-660X

No gold standard exists for histopathological diagnosis of a prosthetic joint infection (PJI). The historical criterion considers the presence of neutrophil infiltration upon examination of periprosthetic tissue. Morawietz et al. proposed a classification of periprosthetic membranes (Morawietz et al., Clin Pathol 59:591-597, 2006, <https://doi.org/10.1136/jcp.2005.027458> [21]) and a more recently described classification with a new cutoff value of 23 neutrophils in 10 high-power fields (Morawietz et al., Histopathology 54:847-853, 2009. <https://doi.org/10.1111/j.1365-2559.2009.03313.x> [22]). We performed a multicenter prospective study, which compared both methods for the diagnosis of PJI. All suspicions of PJI ( = 264) between December 2010 and March 2012 in seven centers were prospectively included. Five perioperative specimens were collected per patient for cultures, and one was collected for histology. Diagnosis of PJI was made according to the Infectious Diseases Society of America (IDSA) guidelines. Histopathological analysis classified the patients according to the threshold of 23 neutrophils and according to the classification of Morawietz. Performances of both methods were compared by using clinical and/or bacteriological criteria as the gold standard. Among 264 patients with suspected PJI, a diagnosis of infection was confirmed in 215 and unconfirmed in 49 patients. Histopathological analysis was available for 150 confirmed PJI and 40 unconfirmed PJI cases. The sensitivity, specificity, positive predictive value, negative predictive value, and accuracy were 78.7%, 90.0%, 96.7%, 52.9%, and 81.1%, respectively, for the Morawietz classification, and 82.0%, 90.0%, 96.9%, 57.1%, and 83.7%, respectively, for the 23-neutrophil threshold. The new algorithm using a threshold of 23 neutrophils can be proposed as a new gold standard for the histopathological diagnosis of PJI.

Résumé en anglais

URL de la notice <http://okina.univ-angers.fr/publications/ua18383> [23]

DOI [10.1128/JCM.00536-18](https://doi.org/10.1128/JCM.00536-18) [24]

Lien vers le document <https://jcm.asm.org/content/56/9/e00536-18> [25]

Titre abrégé J. Clin. Microbiol.

Identifiant (ID) PubMed 29976593 [26]

---

## Liens

- [1] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=19688>
- [2] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=19691>
- [3] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=31549>
- [4] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=19689>
- [5] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=19693>
- [6] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=31550>
- [7] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=19694>
- [8] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=31552>
- [9] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=19696>
- [10] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=31553>
- [11] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=19690>
- [12] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=19699>
- [13] <http://okina.univ-angers.fr/m.rous/publications>
- [14] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=20159>
- [15] <http://okina.univ-angers.fr/marie.kempf/publications>
- [16] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=16586>
- [17] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=19700>

- [18] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=19703>
- [19] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=19705>
- [20] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=19706>
- [21] <https://doi.org/10.1136/jcp.2005.027458>
- [22] <https://doi.org/10.1111/j.1365-2559.2009.03313.x>
- [23] <http://okina.univ-angers.fr/publications/ua18383>
- [24] <http://dx.doi.org/10.1128/JCM.00536-18>
- [25] <https://jcm.asm.org/content/56/9/e00536-18>
- [26] <http://www.ncbi.nlm.nih.gov/pubmed/29976593?dopt=Abstract>

Publié sur *Okina* (<http://okina.univ-angers.fr>)