Bako Diagnostics' Latest DNA Test Improves Detection of Web Space Skin Infections

By Aldo Nahed

Based on years of research and experience in podiatric pathology, **Bako Diagnostics** has developed a new "BakoDx Web Space" DNA-based test panel to identify the infectious agents involved in web space dermatitis. This highly sensitive and highly specific test provides podiatric clinicians with ease of use, rapid results and the most accurate diagnostic method available—allowing for the best patient care.

Web Space infections can be caused by a variety of organisms. Pictured, from left: inflamed erythrasma; a previously macerated and healed ulcer of the interspace and infected tinea pedis.

The test utilizes real-time polymerase chain reaction (RT-PCR) technology to detect the DNA of the causative agent within the web space keratin when present, resulting in the clinically identified dermatitis. The BakoDx Web Space panel tests for:

- Pan-dermatophytes
- *Candida spp*
- *Corynebacterium minutissimum*
- Pan gram-negative bacteria
- *Staphylococcus aureus***

**If positive, reflex test is performed for the mecA gene of methicillin-resistant Staphylococcus aureus (MRSA).

Interdigital infectious dermatitis may be due to a variety of organisms that may look similar, but their treatment differs. Differential diagnosis may include: *Corynebacterium minutissimum* in erythrasma, tinea pedis, candidal intertrigo and/or primary or secondary bacterial infections. There is also a growing awareness of gram-negative bacterial web space infections. The differential diagnosis of web space dermatitis would also include non-infectious etiologies including web space eczema or psoriasis.[1,2]

COMPARE TESTS	Culture	Histopathology	KOH (Fungal)	Web Space DNA Test
Turnaround Time	2-28 days	2-3 days	Same day	1-2 days
Sensitivity	50-75%	85-90%[3]	73-91%[4]	92-100%[5]
Specificity	100%	72%[3]	42-91%[4]	97-100%[5]

"This test is designed for those patients with web space dermatitis, where an infectious etiology is suspected," said Dr. Wayne L. Bakotic, Chief Medical Officer at BakoDx. "DNA analysis allows us to identify the infectious agent in the most accurate, efficient and rapid manner."

The BakoDx Web Space panel identifies the causative agent of interdigital skin infections with the highest sensitivity and specificity available, compared to conventional diagnostic methods. Results are available within 1-2 days, giving clinicians the advantage of rapid, targeted patient treatment plans.

Current diagnostic methods including culture, histopathology and KOH have a lower sensitivity and specificity, as compared to the BakoDx Web Space panel. In addition, the limitations of time may make KOH an impractical option. The BakoDx Web Space DNA panel provides the most rapid results with the highest specificity and sensitivity with a simple collection method to give you the time to spend with your patient. In addition, BakoDx's comprehensive, molecular test report provides a clear and detailed explanation of the test results and therapeutic options, with literary references.

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"The rapid and accurate identification of pathogens present in web space infections is critically important for prompt and effective therapy," said Dr. William P. Scherer, Senior Podiatric Medical Advisor for BakoDx. "Providing the appropriate therapy reduces treatment failures and repeat patient visits. In addition, early and accurate diagnosis may also prevent secondary infections compounding the clinical presentation and adding complexity to the treatment regimen."

Ease of Sample Collection

The collection method for a patient's specimen is a simple, superficial skin scraping performed in-office with the debris collected in a Dermapak.

Bako Diagnostics *(continued)*

When it comes to proper web space specimen collection technique and obtaining adequate tissue, Dr. Scherer states, "the best method is to scrape exfoliated debris directly into the Dermapak followed by wiping the instrument on the inner surface of the collection pack to ensure optimal acquisition. If visible tissue is procured from the scraping then you likely have adequate sample for testing."

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This simple collection process is time saving and by far the least invasive sampling method with little to no post procedure wound care. By utilizing the BakoDx Web Space infection test, clinicians also eliminate other time-consuming in-office procedures, allowing more time to be spent with the patient and increasing patient satisfaction.

"With this rapid and definitive diagnosis in hand through DNA testing, clinicians can feel confident that the first therapy is the appropriate therapy and their patient is well on the way to a resolution," said Dr. Bakotic, BakoDx CMO.

As the leader in lower extremity pathology diagnostics, BakoDx enables clinicians to practice evidence-based medicine and provide their patients with the most effective and economic therapeutic options. *To get started with BakoDx's Web Space DNA test, call 855-422-5628 or visit bakodx.com/webspace or click here to learn more.*

[1] Hainer BL. Dermatophyte infections. Am Fam Physician. 2003; 67(1):101-8.

[2] Bristow I. Non-ulcerative skin pathologies of the diabetic foot. Diabetes Metab Res Rev. 2008;24(Suppl1):S84-89.

[3] J Am Acad DDermatol. 2003 Aug;49(2):193-7.

[4] Jacob Oren Levitt, Barrie H. Levitt, Arash Akhavan, and Howard Yanofsky, "The Sensitivity and Specificity of Potassium Hydroxide Smear and Fungal Culture Relative to Clinical Assessment in the Evaluation of Tinea Pedis: A Pooled Analysis," Dermatology Research and Practice, vol. 2010, Article ID 764843, 8 pages, 2010; Journal of Basic & Clinical Medicine 2016; 5(2):4-6

[5] Internal validation study compared to NYS Dermatophyte, NYS Candida, and Sanger DNA sequencing.