S. aureus Infections Often PVL-Positive Strains

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VIENNA — Pyogenic *Staphylococcus aureus* skin infections located on the axilla, groin, upper thigh, or buttocks are twice as likely to be due to the more virulent Panton-Valentine leukocidin–positive strains than to *S. aureus* negative for the cytotoxin, according to a large study.

On the other hand, staphylococcal skin infections located on the torso are three times more likely to be Panton-Valentine leukocidin (PVL) negative than PVL positive, Dr. Angela M. Kearns said.

These new findings regarding the differential preference of PVL-positive and PVL-negative *S. aureus* skin infections for certain body sites can aid in speedy recognition, diagnosis, and treatment of these infections, as can additional insights provided by the study, noted Dr. Kearns of the Health Protection Agency Centre for Infections, London.

She presented an analysis of 1,230 isolates of *S. aureus* from boils, abscesses, carbuncles, and furuncles in patients throughout England, Wales, and Northern Ireland in 2008. Of these, 68% were methicillin-susceptible *S. aureus* (MSSA) and 32% were methicillin-resistant *S. aureus* (MRSA). Two-thirds of the *S. aureus* isolates were PVL positive, and two-thirds of PVL-positive isolates were MSSA.

Patients with PVL-positive pyogenic skin infections tended to be younger, with a median age of 26 years, compared with 38 years for patients with PVL-negative disease. Classically, a pyogenic skin infection in a patient aged 40 years or older is likely to be PVL negative, she said.

A total of 42% of all PVL-positive infections occurred on the buttocks, axilla, or groin, as did 23% of all PVL-negative infections. "Those are areas where there's a preponderance of hair follicles and a warm, moist environment," Dr. Kearns noted.

In contrast, 33% of all PVL-negative skin infections were located on the torso, compared with just 11% of PVL-positive infections. The head, arms, and legs accounted for similar proportions of all PVL-positive and PVL-negative infections.

PVL-positive infections were more likely to be recurrent, sometimes to the point of being debilitating. One-third of all PVL-positive infections were recurrent, as were 22% of PVL-negative ones.

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DR. KEARNS

A total of 4% of patients with pyogenic skin infections due to PVL-positive *S. aureus* strains had a strong history of international travel, as did 1.4% of those with PVL-negative disease. A total of 7% of patients in each group had multiple lesions.

Dr. Kearns drew particular attention to what she called a "remarkable" difference between PVL-positive and PVL-negative infections in terms of propensity for clustering. There was just a single case of household transmission of a PVL-negative staphylococcal pyogenic skin infection, compared with 30 instances of household transmission of PVL-positive infections, each involving up to six individuals. Investigators also noted clustering of PVL-positive skin infections in schools, nurseries, long-term care facilities, sports teams, and the military.

In reply to an audience question, she said she doesn't encounter many cases of PVL-positive staphylococcal pyogenic skin infection in association with nasal carriage. Where she sees a lot of repeatedly recurrent PVL-positive pyogenic skin infections is in conjunction with throat carriage.

Although controversy continues on whether PVL positivity is a cause of infection or merely a marker, PVL-positive *S. aureus* pyogenic skin infections are an increasing public health problem all over the world, Dr. Kearns said. ■

Disclosures: *Dr. Kearns reported no financial conflicts.*