

Lethal Bacteria May Lurk Within Petechial Rash

BY BRUCE JANCIN

VAIL, Colo. — When is it time to worry about a child or adolescent with a petechial rash?

Three potentially lethal yet treatable bacterial infections often produce a petechial rash: *Staphylococcus aureus* sepsis, meningococcal disease, and Rocky Mountain spotted fever, Dr. Samuel R. Dominguez noted at a conference on pediatric infectious diseases sponsored by the Children's Hospital, Denver.

He worries more about one of these possibilities if the patient appears ill on physical examination; has generalized petechiae, purpura, prolonged capillary refill; and/or an abnormal CBC, C-reactive protein, or other laboratory tests. He worries less if the youth looks well and has normal lab values.

Petechiae only distributed above the nipple line are a somewhat reassuring but less than conclusive indicator that the child doesn't have invasive bacterial disease. In his review of four large published studies of children presenting to emergency departments with a petechial rash, two studies concluded that no one with petechiae located only above the nipple line had invasive bacterial disease. In the other two studies, however, the distribution of petechiae wasn't predictive of serious disease, said Dr. Dominguez of the University of Colorado, Denver.

Putting together the findings of these four studies, roughly 10% of children with a petechial rash who present to the emergency department have underlying meningococcal disease, he added.

Dr. Dominguez said that any seriously ill youth with a petechial rash ought to be treated empirically with ceftriaxone to address a possible *Neisseria meningitidis* infection, vancomycin to cover methicillin-resistant or methicillin-sensitive *S. aureus*, or doxycycline to cover *Rickettsia rickettsii* if the time of year and locale are right for Rocky Mountain spotted fever.

Even in the modern era of intensive care units, overall mortality of meningococcal disease is about 10%, climbing to 25% in infected adolescents.

Rocky Mountain spotted fever is a tick bite-transmitted summer illness. The disease is considerably more common in the Mississippi River basin than in the Rocky Mountain states. Ninety percent of cases occur in April through September; two-thirds are in children under age 15 years, peaking at ages 5-9 years. Often the patient has no recollection or sign of a tick bite. Twenty percent of untreated cases are fatal, but with doxycycline mortality drops to 5%.

The clinical syndrome begins with sudden-onset fever and malaise after a mean incubation period of 7 days. The rash appears 2-5 days after the fever. It initially takes the form of small, blanching macules on the ankles and wrists that spread to the palms and soles, then centripetally to the arms and legs, and finally to the trunk. Within a week the rash is

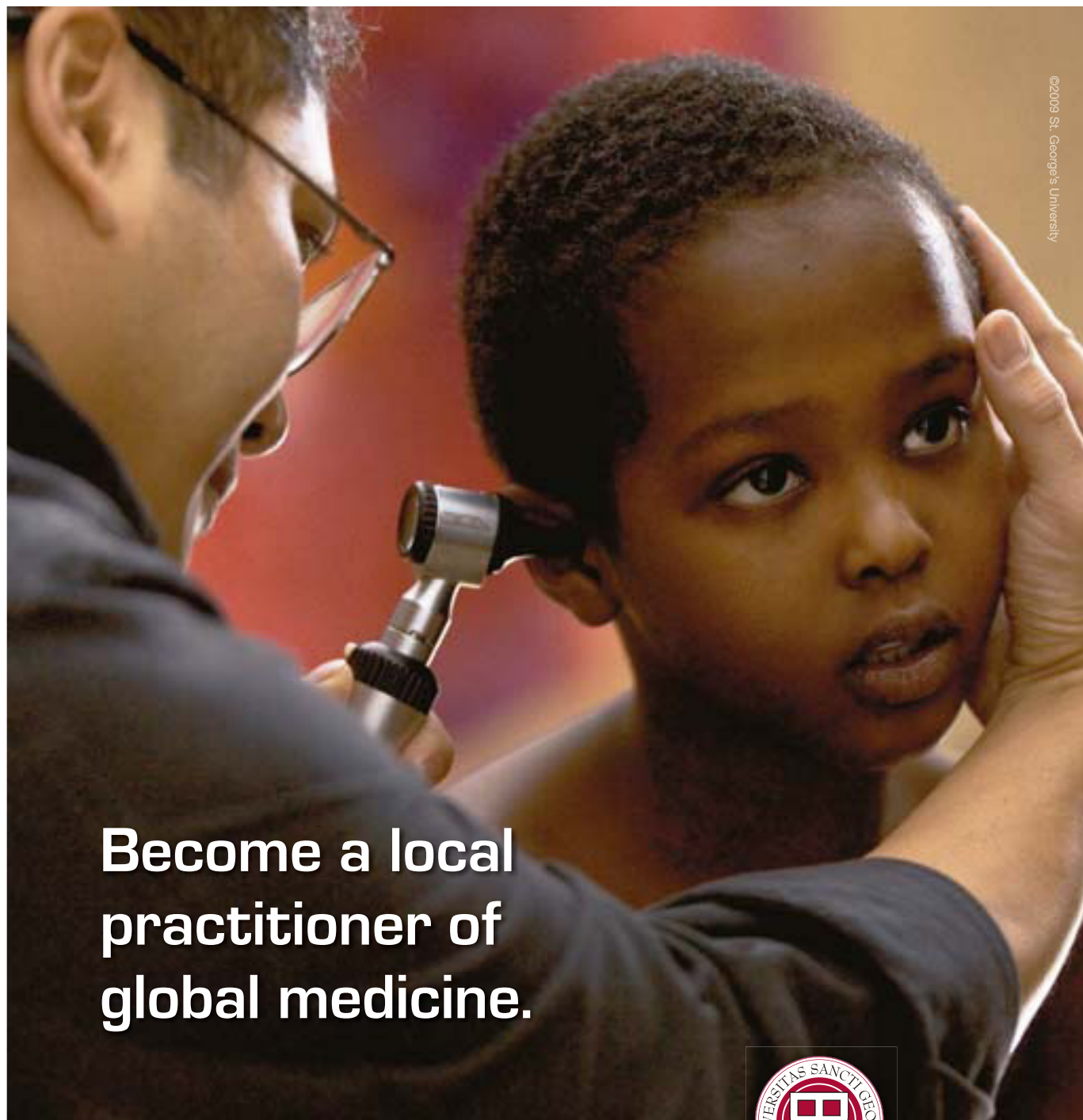
maculopapular with central petechiae.

Children at high risk for infective endocarditis with *S. aureus* sepsis are those with congenital heart disease, hospitalized neonates, and patients with an indwelling central venous catheter, but 10% of pediatric cases occur in children without any identifiable risk factors, Dr. Dominguez said. ■



COURTESY DR. WILLIAM J. BARSON

The rash associated with Rocky Mountain spotted fever starts on the ankles and wrists 2-5 days after a sudden-onset fever and spreads to the palms and soles.



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