ASP-Infectious Diseases Society of America-Young Investigator Award in Geriatrics

Award Recipient:

Cathy A. Petti, MD
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Project:

Prosthetic Joint Infections in the Elderly: Laboratory Detection and Management

Mentorship Team:

Matthew Samore, MD
Merle Sande, MD
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With expected increases in the elderly population, those over 65 years of age will account for more than 70 percent of arthroplasties. Infection of the prosthetic device is a devastating complication with considerable impact on functional status and cost to the health care system. The management decisions for elderly patients presenting with prosthetic joint infections are complex and based on limited available data. Microbiologic data, a focal point in the decision-making process, may be conflicting and often serves as a barrier to providing effective patient care. Despite numerous studies that have focused on different culture methods for the diagnosis of prosthetic joint infections, no methodology has emerged clearly as a gold standard.

Another barrier to providing effective care to elderly patients with suspected or definite prosthetic joint infections is managing the trade-offs among different medical and surgical therapeutic modalities. Little is known about the interplay of various medical and surgical therapeutic modalities among the aging or the health benefits of a given intervention in the context of an individual and systems level. We will assess the health-state utility (time trade-off) and willingness-to-pay values to measure the acceptability of different medical and surgical treatment options for elderly patients using hypothetical scenarios.

We propose that by improving existing traditional culture methods and developing molecular capabilities for the laboratory diagnosis of infection, we can provide physicians with more precise data to optimize treatment strategies. We also hypothesize that the data generated by comparing utilities of states with patients' perceived/experienced values can provide physicians with informed decision-making capabilities when managing elderly patients suffering from prosthetic joint infections.

The objectives of the research project are to:

1. Improve the specificity and sensitivity of current laboratory methods in the diagnosis of prosthetic joint infections by optimizing conventional culture methods and utilizing molecular diagnostics.
2. Define the impact of prosthetic joint infections on the health care system and the aging population using specific outcome variables.
3. Improve our understanding of the health-state utilities of elderly patients with prosthetic joint infections and establish a more informed decision-making model for clinicians.

My training in both infectious diseases and medical microbiology provides me a unique perspective concerning the synergism between clinician and laboratory. Also, I am fortunate to benefit from a multidisciplinary mentorship team at the University of Utah School of Medicine that will forge a greater understanding of the different challenges faced by geriatricians, orthopedists, and infectious disease specialists when managing prosthetic joint infections among the aging.

The support of the ASP-Infectious Diseases Society of America-Young Investigator Award will allow me to pursue independent research and support my effort in educational activities to raise awareness among physicians about aging-related infections. Developing multidisciplinary conferences, mentoring joint-trained geriatric-infectious diseases fellows, and delivering grand rounds to divisions of geriatrics, orthopedics, and infectious diseases are among the educational activities that will be supported by this award. Finally, the award will enable me to pursue long-term research grants in the areas of improving laboratory diagnostics, generating outcomes-data for prosthetic joint infections, and having a greater understanding of utility values for certain health states among the aging population.