

## Researchers link left-sided brain injury with greater risk for hospital-acquired infections

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The March 2013 issue of *Archives of Physical Medicine & Rehabilitation*, the medical journal of the American Congress of Rehabilitation Medicine, features an article by Kessler researchers Pasquale Frisina, PhD, Ann Kutlik, BA, and A.M. Barrett, MD. Left-sided brain injury associated with more hospital-acquired infections during inpatient rehabilitation has implications for further research into brain-mediated immune defenses, infection control practices and cognitive rehabilitation strategies to improve outcomes after stroke and traumatic brain injury.

The authors, a team of stroke specialists from Kessler Foundation and Kessler Institute for [Rehabilitation](#), report findings of a retrospective study of 2236 inpatients with brain lesions caused by traumatic brain injury or stroke. Hospital-acquired [infection](#) (HAI), a common complication that adversely affects outcomes and costs, was defined as infection diagnosed within 48 to 72 hours of admission. Of the 163 patients identified as having hospital-acquired infections, 60.1% had left-sided lesions. This finding was consistent with the hypothesis that a left-dominant brain immune network (LD-BIN) may influence the occurrence of HAI during inpatient rehabilitation for stroke and TBI.

These findings may help healthcare providers predict who is most susceptible to HAI, according to lead author Pasquale Frisina, PhD, which could help reduce mortality rates, control costs of care and improve outcomes. "The study indicates that antisepsis may not be the best or sole method to manage infection risk after [stroke](#) and [brain injury](#)," said Dr. Frisina. "Future research should focus on ways to

optimize the LD-BIN to improve health. These may include brain stimulation techniques such as direct electrical stimulation of the prefrontal brain or behavioral techniques such as mental/cognitive exercise." He added that this investigative approach might lead to novel interventions aimed at increasing infection resistance, rather than on reducing or eradicating pathogens.

"Clinicians rarely think about the brain and immunity," noted A.M. Barrett, MD, "but the balance between left and right brain activity is known to affect our infection resistance. I'm proud to be part of scientific activities that ask these kinds of innovative questions, and get answers that become the basis for new, improved processes for clinical care."

**More information:** <http://dx.doi.org/10.1016/j.apmr.2012.10.012>

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