

'Very low' risk of infections in advanced brain procedures

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Patients undergoing cerebral angiography and neurointerventional procedures on the brain are at very low risk of infection—even without preventive antibiotics, reports a study in the March issue of [Neurosurgery](#), official journal of the [Congress of Neurological Surgeons](#).

"These data suggest that the overall risk of infection associated with most neuroangiographic procedures is very low," according to the study by Dr. Prashant S. Kelkar and colleagues of University of Alabama, Birmingham. Based on their results, the researchers believe routine preventive antibiotics may not be needed for patients undergoing brain angiography and interventions.

Out of 2,900 Procedures, Just Three Infections

The authors reviewed their experience with more than 2,900 cerebral angiograms and neurointerventional procedures performed between 2004 and 2011. An [angiogram](#) is an x-ray procedure using a special dye injected into the [brain blood vessels](#). Neurointerventional procedures are various types of minimally invasive (nonsurgical) procedures performed to treat [brain lesions](#) such as aneurysms.

Both types of procedures are performed by threading a catheter through the patient's blood vessels—usually accessing the [femoral artery](#) through a tiny incision in the upper thigh. Unlike at some other centers, the authors did not routinely give antibiotics to prevent infections in patients

undergoing these procedures.

The experience included approximately 2,000 angiographic and 900 neurointerventional procedures. Just three patients had infections directly attributable to the procedure—a rate of one-tenth of one percent (0.1%). All were localized infections involving the femoral artery access site in the thigh. There were no infections of the brain or [central nervous system](#).

All infections were successfully treated with antibiotics; two of the patients underwent [minor surgery](#) as well. In one patient, the infection was likely related to suppressed [immune function](#) because of [cancer treatment](#). None of the patients died as a result of their infection.

Routine Antibiotics May Be Unnecessary

Cerebral angiography is a common diagnostic test for patients with stroke and other disorders. Neurointerventional procedures provide a less-invasive alternative to surgery for selected patients with aneurysms or other lesions of the brain blood vessels.

At many hospitals, patients undergoing these procedures are routinely given antibiotics to prevent infections. However, few studies have evaluated the risk of infection in patients undergoing cerebral angiography and neurointerventional procedures.

The new study finds that the risk of infection is very low, even without routine use of antibiotics. The authors suggest the low risk of infection may reflect the minimally invasive nature of these procedures; their short duration, compared to brain surgery; and the "blood-brain barrier" preventing bacteria from crossing from the bloodstream into the brain.

Dr. Kelkar and colleagues believe their results question the need for

routine antibiotics for patients undergoing these procedures.

"Prophylactic antibiotic use may be a reasonable option for selected patients," they write, "but is probably unnecessary for standard use in the context of meticulous care during procedures."

Provided by Wolters Kluwer Health

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