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## Adverse Reactions Associated with Midline Catheters

**by Gina Pugliese, RN, MS**
**Medical News Editor**

The CDC recently reported four episodes of acute hypersensitivity-like reactions temporally associated with insertion of midline catheters made from Aquavene (Landmark, Menlo Care, Menlo Park, California). These midline catheters are an elastomeric hydrogel material that becomes hydrated and expands after catheter insertion.

The midline catheter is a peripherally inserted 6- to 8-in catheter that may be used in patients requiring intermediate duration (ie, several weeks) of physiologically compatible intravenous (IV) therapy. Unlike conventional short peripheral IV catheters, the midline catheter does not require changes every 48 to 72 hours. Midline catheters can be inserted at the beside by a trained healthcare worker, in contrast to subclavian, jugular, or femoral central venous catheters, which require insertion by a physician (often in an operating or procedure room) and usually are associated with more serious complications.

CDC described four episodes of acute hypersensitivity during 1992 to 1995, including one in a patient in a home healthcare setting and three among patients at a large university-affiliated hospital. Common symptoms included chest pain, shortness of breath, flushing, and urticaria, all of which were resolved within 10 minutes of catheter removal. Blood cultures were always negative. From April 1990 through July 1995, a total of 72 adverse reactions similar to those described in this article were reported to the FDA. At the hospital involved in this report from CDC, 292 Landmark midline catheters were inserted from January 1993 through September 1994, and the three episodes of hypersensitivity occurred during this period. In addition, 70,838 other types of catheters made by other manufacturers were inserted at that hospital during this period without adverse effects.

The cause of the adverse reactions temporally associated with the insertion of midline IV catheters described here is unknown. The acute onset of flushing in the patients suggests several possibilities, including hypersensitivity. The common, temporally associated exposures among the four patients were the insertion of a Landmark midline catheter and flushing of the catheters with 0.9% sterile saline. Possible sources for reactions include catheter components, intrinsic or extrinsic material on the catheter, residual materials associated with sterilization or packaging, injectable fluids and medications, anatomic location of the catheter insertion, or insertion technique. Latex was not a component of the catheter.

Because of the rare occurrence of acute hypersensitivity reactions associated with the insertion or flushing of IV catheters, the association between these reactions and one or more catheters may be difficult to recognize at any single institution. Healthcare workers who observe reactions associated with IV devices are encouraged to report their findings to the FDA Medwatch Program (telephone 800-332-1988) and through their state health department to the CDC hospitals Infections Program (telephone 404-639-6413).

FROM: CDC. Adverse reactions associated with midline catheters—United States, 1992-1995. *MMWR* 1996;45(5):101-103.