

Old method of heart bypass better than 'off-pump'

November 4 2009, By STEPHANIE NANO , Associated Press Writer

(AP) -- It seemed like a great idea - doing bypass surgery while the heart is still beating, sparing patients the complications that can come from going on a heart-lung machine. Now the first big test of this method has produced a surprise: Bypass has fewer problems and is more successful done the old way.

Most surprisingly, there were no signs of mental decline in those on the machines. Avoiding this problem was thought to be one of the benefits of so-called "off-pump" [surgery](#) without a machine.

"For the vast majority, there's no advantage to doing it off-pump and there may be some disadvantages," said Dr. Frederick Grover of the University of Colorado Denver, one of the leaders of the study.

[Heart bypass](#) is believed to be the most common surgery in the world - an estimated 253,000 Americans have the operation each year.

Traditionally, the surgery is done while the patient is hooked up to a heart-lung machine which takes over the job of circulating blood while the beating heart is stopped. That "on-pump" method makes it easier for surgeons to attach new arteries or veins to create detours around [clogged arteries](#).

But the heart-lung machine carries a small risk of complications, including stroke. In the 1990s, surgeons began doing off-pump surgery - without the machine but with devices that stabilize the beating heart.

Today, about one in five bypasses are done off-pump, and it's been hotly debated which is better. Earlier, small studies have suggested outcomes were about the same, or gave a slight advantage to off-pump. The debate got attention when former President Bill Clinton had quadruple bypass with a heart-lung machine in 2004. Patients sometimes are offered a choice of methods.

The research reported in Thursday's [New England Journal of Medicine](#) is the largest to date to compare the two techniques in a rigorous manner. The study involved 2,203 patients at 18 Veterans Affairs medical centers.

About half were randomly assigned to [bypass surgery](#) with a heart-lung machine, half without.

A month after surgery, there was no difference in the number of deaths or other complications in the two groups.

But a year later, the off-pump group had worse outcomes. About 10 percent had either died, had a heart attack or needed another bypass or procedure to open a blocked artery, compared to about 7 percent of the on-pump group.

Also, the off-pump group got fewer artery detours than originally planned and fewer of their bypasses were still open after a year, about 83 percent versus 88 percent for on-pump. Because the heart is full of blood during off-pump surgery, it's harder to reach and repair the arteries at the back of the heart, Grover explained.

Some patients were given a battery of mental tests before surgery and after a year; there was no mental decline in either group.

"We always have the idea that less is more - less invasive or less anything

seems to be a better answer. That isn't always the case," said Dr. Eric Peterson, a heart doctor at Duke University Medical Center.

Peterson, who wrote a journal editorial, said it was "a remarkably well-done study" but won't end the debate.

There may be some types of patients for whom off-pump bypass is beneficial, Grover and Peterson said. Previous research has suggested that women, the elderly and those with other illnesses may do better off-pump. The VA-funded study was mostly men who were younger and healthier than the typical bypass patient, Peterson noted.

Because of the results, Grover said he's become more conservative about doing off-pump bypass on his patients. But he thinks surgeons who do a lot of off-pump bypasses and are strong believers will probably stick with it.

"It is a good study for: Should America adopt this? And the answer to that is probably not," said Peterson.

On the Net: New England Journal: <http://www.nejm.org>

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