

Study Questions Value of Infertility Aids

Soranus, a second century Roman physician, characterized fertile women as "those who are beyond the fourteenth or fifteenth year of age, not too long nor too thick set, not too fat, not too flabby, not too moist or too dry, with cervixes not too open nor too closed ... who menstruate regularly." Though the understanding of why some couples can conceive children while others can't has improved considerably in 1,700 years, and dramatically in the last 10, problems of infertility persist for an estimated 10 to 15 percent of couples of childbearing age. A Canadian study in the Nov. 17 *NEW ENGLAND JOURNAL OF MEDICINE* indicates that many couples seeking medical help for infertility may eventually achieve pregnancy, but not necessarily because of treatment.

The survey, begun in 1975 by John A. Collins and colleagues at Dalhousie University in Halifax, Nova Scotia, traced 1,145 infertile couples for two to six years after treatment, and reveals that up to 267 of the 437 women who conceived, did so irrespective of the therapy they underwent. Among the 267, 71 percent of the pregnancies occurred in untreated couples, while 29 percent occurred so long after treatment that the two events should not be linked, Collins reports. While editorialists in the same journal question Collins' definition of "treatment," they agree with the report's main thrust, that it is time for a tightly controlled study of infertility treatments and their effectiveness.

"We think the study has two messages," Collins told *SCIENCE NEWS*. "First to couples: Not all infertile couples need a treatment. Many treatments today are costly or complex and not appropriate for all people. The second message is to doctors: It's time to begin a scientific evaluation of infertility therapies."

Although scientists have observed for many years that a relatively high percentage of "infertile" women will eventually become pregnant even without treatment, controlled studies of the various therapies have been scarce. "Some of the available reports are more than 30 years old and are not relevant to currently available treatment methods," Collins reports.

Robert Glass, an infertility specialist at the University of California at San Francisco who praised Collins' report, cites the pressure that desperate couples place on their physician to prescribe some sort of treatment as the main reason controlled studies have not been conducted in the past. "Controlled" means that for every couple prescribed treatment for a specific type of infertility, another couple must forgo therapy — an undesirable option for many.

Collins says he and his team are not call-

ing for a more conservative treatment of infertility, necessarily, but for a "more tailored treatment." Some specific types of infertility, including irregular ovulation or blockages in fallopian tubes, can be readily identified and effectively treated, he says, thanks to two decades of advances in diagnostic techniques such as ultrasound and fluoroscopy, therapeutic microsurgery and increasingly sensitive hormonal assays. But for the majority of the patients Collins studied whose infertility stemmed from a mild or moderate abnormality and who subsequently conceived, the pregnancy was treatment-independent. "We're saying, 'if you don't know the cause of infertility, don't prescribe treatment,'" Collins says.

John W. Grover and Charles E. Miller of Lutheran General Hospital in Park Ridge, Ill., co-authored an editorial in the same journal that underscored Collins' call for a rigorous study of old and new therapies. In an interview with *SCIENCE NEWS*, Miller suggested that, if begun today, the same survey might show a higher success rate for specific treatments, thanks to technical advances in the last five years.

"In 1983 we can diagnose 95 percent of all [infertility] patients," Miller says. "We can't yet treat them all, but we can diagnose them. That is certainly better than we could do even in the late 1970s. This is such an explosive field that I think we have to continue to reevaluate the statistics."

—D. Franklin

American Heart Association annual meeting

Clot dissolver may save heart tissue

A naturally occurring substance called tissue plasminogen activator (TPA) may prove useful in dissolving the blood clots that usually block up coronary arteries during heart attacks, and that substance has been produced with recombinant DNA techniques, researchers said at last week's meeting of the American Heart Association in Anaheim, Calif.

The role of clots in heart attack — cause or immediate effect — has not yet been nailed down. But since a clot blocks blood flow to part of the heart muscle, thereby killing it, researchers hope that getting rid of a clot within the first hour or so of a heart attack will resupply the area with blood and mitigate some of the long-term effects.

Studies presented at the meeting by Burton Sobel of Washington University in St. Louis, Déséré Collen of the University of Leuven in Belgium and others indicate that in dogs TPA saves 30 to 70 percent of the jeopardized heart muscle if the clot is dissolved within one or two hours, and that TPA can specifically dissolve clots in the coronary arteries in 7 to 60 minutes. These results, Sobel says, agree with work done on dogs at the Massachusetts General Hospital in Boston.

TPA has been tried on a handful of patients in the United States and Belgium by Sobel, Collen and others, but they did not divulge the results at the meeting, pending publication in a medical journal.

TPA works by converting plasminogen to plasmin, starting the cascade of chemical events involved in clot dissolving. The existence of TPA has been known since the 1950s, but few experiments were done with it — the substance has

proved difficult to purify.

A TPA-producing human cell line from cultured melanoma cells has been established, and Genentech Inc. of South San Francisco has begun producing a recombinant TPA, using the TPA-producing gene from the melanoma cell line inserted in a non-bacterial cell. Collen, who has worked with the product, says, "The recombinant activator could not be distinguished from the natural one." There is "essentially no" danger of contamination from the tumor cells, he says.

Currently, two clot dissolvers are being used experimentally but both have possible side effects. Streptokinase, a bacterial product, causes an allergic reaction and cannot be re-used for six months. Urokinase, extracted from human tissue, is not allergenic but it is expensive. Both substances create the potential for excessive bleeding. If a person has either one in the bloodstream and an artery is cut during any medical procedure, says Peter Rentrop of Mt. Sinai Medical Center in New York, who is evaluating streptokinase, "you're in big trouble... it can be a major medical problem."

Sobel expressed hope that if the substance lives up to its promise, someday potential heart attack victims could carry it around in a vial, ready for self-administration at the first sign of a heart attack. But, he notes, "It may not be that getting rid of the clot is a complete solution to the problem because the things that precipitated the clot in the first place, like atherosclerosis, are still there."

—J. Silberner