Notable Progress Made on Male Birth Control Pill

By Nicholas Staropoli — October 6, 2015

Women scored a major win for family planning in 1960 with the approval of Enovid, the first oral contraceptive approved in the United States. Since then contraceptives for women has expanded to include safer, more effective versions of "the pill," as well as intrauterine devices and emergency contraceptive.

However, aside of progressing from sheep skin to latex for condoms, advances in male contraception have been non-existant. If a man seeks more control in the realm of family planning he must choose from a list of imperfect options and practices that include, condoms, abstinence, coitus interruptus, and/or a vasectomy.

Many scientists and public health advocates have opined that an oral male contraceptive would be a boon for male sexual health. Finding a version of the pill for men has been previously elusive, but researchers at the Osaka University and Tsukuba University in Japan believe they now have some options.

These candidates are not novel compounds, but they are drugs already approved in the U.S. for immunosupression. The two drugs, cyclosporine A and FK506, are currently given to patients receiving organ transplants, as a means to reduce the chances of tissue rejection.

They both target and block the activity of a molecule called calcineurin, which is an enzyme used by immune cells (as well as others) as a signal to activate other immune cells. Calcineurin is used by other cells of the body too, including sperm cells which use calcineurin in motility.

The researchers, whose results were published in the journal, Science, first observed the importance of this enzyme in mice. They noted that male mice lacking in calcineurin were able to have sex normally, but were not able to impregnate their mates. The researchers then analyzed the semen and found the sperm's tails were too rigid to help fertilize an egg.

Next, researchers gave normal mice the two immunosupressive drugs and found a similar result: the males were unable to impregnate females. However, they also found that withdrawal of the
drugs reversed the process. One week after the treatment was stopped, the mice regained the ability to impregnate females at a normal level.

Despite these promising results, the drugs face major obstacles to getting to market. A weakened immune system is not an acceptable side affect for a male contraceptive pill. So the makers will have to modify the dose and drugs so they produce an effect only on the sperm cells.

However, there is hope for this to occur. Sperm use a slightly different form of calcineurin than do immune cells. Researchers are confident they can find or create a molecule that specifically inactivates only the sperm version. If they are right, it will be a tremendous step forward for men hoping to have more control over family planning.

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