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Endometriosis-infertility link explained?

Infertility in women with mild endometriosis may be explained, at least in part, by a lack of certain proteins in the peritoneal fluid, says Robert Lessey (University of North Carolina, Chapel Hill, NC, USA). "Doctors like to lump everyone together, but not everyone with endometriosis is the same. Now we have a marker which may help identify those women who really need therapy."

Lessey and co-workers injected peritoneal fluid from women with and without mild endometriosis into recently mated mice around the time of embryo implantation. Mice given fluid from infertile women with endometriosis had fewer implantations than did mice receiving fluid from fertile women or from women with recently treated endometriosis; they also had reduced uterine concentrations of leukaemia inhibitory factor and did not express alphavbeta3 integrin. Embryo implantations may have been adversely affected by the infertile women's peritoneal fluid, suggest the authors (*Fertil Steril* 2000; **74**: 4148).

Because about half of women with mild endometriosis have no problem getting pregnant, a link with infertility is controversial, explains Lessey. "Those who don't get pregnant are given the diagnosis of 'unexplained infertility'. Yet they seem to have biochemical evidence that something is different, and these proteins are part of that difference." Thus, he insists, the absence of alphavbeta3 and reduced leukaemia inhibitory factor "could discriminate those women with serious defects" which really do interfere with implantation. Such women could be treated with surgical (lasers) or medical (gonadotrophin-releasing hormone) techniques to improve their chances of conceiving, he says.

A US company has started marketing a test of uterine receptivity based on these markers, notes Lessey. But although the test detects women missing alphavbeta3, its use is "premature", he says, since some women without alphavbeta3 are fertile. "Combinations of markers might be more specific."

"There are lots of factors out there", affirms Bryan Cowan, spokesperson for the American Society of Reproductive Medicine. "They affect sperm function, macrophage activation, peritoneal and tubal responses. So much is going on, and just about everything that's been tested shows differences, so this is unlikely to be the final link." In addition, "the peritoneal fluid is outside of the uterus, and the endometrium being tested is on the inside. We have a big leap to demonstrate that the stuff on the outside of the uterus can actually influence the endometrium", he concludes.

Marilynn Larkin