

Research shows some recurrent miscarriages due to 'Super Fertility'

August 28 2012, by Bob Yirka



(Medical Xpress)—A team of British and Dutch researchers working out of Princess Anne Hospital in the UK have found evidence to suggest that the reason some women experience multiple miscarriages is because their wombs allow non-viable embryos to attach to the uterine wall long enough to pass a pregnancy test. The team says this new research, which they describe in their paper published in *PLoS ONE*, turns on its head conventional thinking that suggests women who miscarry multiple times are somehow rejecting embryos due to immunological issues.

For years, conventional thinking has suggested that women who experienced multiple miscarriages did so because their immune systems found an embryo to be a foreign body and went on the attack. Such

thinking has led to feelings of failure in many women and the many [emotional issues](#) it entailed. This new research shows that, at least in some cases, it's quite the opposite. Rather than their bodies failing them, women who miscarry multiple times might be super fertile; their wombs attempt to carry embryos whether they are healthy enough to survive to term, or not.

To better understand what might be happening, the researchers enlisted two groups of female volunteers; women with a history of miscarriages, and women with no history of miscarriages. Both groups allowed eggs to be harvested from their bodies which were subsequently inseminated to create embryos. Each woman also had [cells](#) from her uterus harvested as well. The team placed the embryos in a container with a channel in it that led to the cells from the [uterus](#) then watched to see which group of cells grew towards the embryo, emulating that process that occurs inside the [womb](#).

The team found that the cells from the group of women with a history of miscarriages grew towards the embryo in virtually all cases, while those from the group that did not have such a history did so only when the embryo appeared to be of high quality. If low quality [embryos](#) were allowed to attach to the uterine wall inside of a woman, the result would likely be a miscarriage.

The researchers say that it appears likely that now some instances of multiple miscarriages can be attributed to this super fertility in women, and thus a search will begin to find a less invasive way to test other women with such a history and then to see if there is a way to cause a discerning ability to come about as it does with women with no such history. In the meantime, they say, women can stop feeling like failures if they miscarry multiple times, instead it appears they might just be overachievers.

More information: Weimar CHE, Kavelaars A, Brosens JJ, Gellersen B, de Vreeden-Elbertse JMT, et al. (2012) Endometrial Stromal Cells of Women with Recurrent Miscarriage Fail to Discriminate between High- and Low-Quality Human Embryos. PLoS ONE 7(7): e41424.

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Abstract

Background

The aetiology of recurrent miscarriage (RM) remains largely unexplained. Women with RM have a shorter time to pregnancy interval than normally fertile women, which may be due to more frequent implantation of non-viable embryos. We hypothesized that human endometrial stromal cells (H-EnSCs) of women with RM discriminate less effectively between high- and low-quality human embryos and migrate more readily towards trophoblast spheroids than H-EnSCs of normally fertile women.

Methodology/Principal Findings

Monolayers of decidualized H-EnSCs were generated from endometrial biopsies of 6 women with RM and 6 fertile controls. Cell-free migration zones were created and the effect of the presence of a high-quality (day 5 blastocyst, n = 13), a low-quality (day 5 blastocyst with three pronuclei or underdeveloped embryo, n = 12) or AC-1M88 trophoblast cell line spheroid on H-ESC migratory activity was analyzed after 18 hours. In the absence of a spheroid or embryo, migration of H-EnSCs from fertile or RM women was similar. In the presence of a low-quality embryo in the zone, the migration of H-EnSCs of control women was inhibited compared to the basal migration in the absence of an embryo (P

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