Recurrence of implantation failure (RIF) patients exhibit poor endometrial receptivity and abnormal decidualization with reduced effectiveness to progesterone, an intractable clinical problem with elusive mechanisms. EHD1 overexpression promotes the SUMOylation and ubiquitination degradation of PRB protein leading to decreased transcriptional activity and responsiveness of endometrial stromal cells to progesterone. Understanding the role of endometrial stromal cells in RIF will open avenues for novel therapeutic strategies for recurrent implantation failure patients.

What is known already: Abnormal decidualization is a significant cause of infertility in RIF patients. A previous study demonstrated that EHD homeodomain 1 (EHD1) is significantly elevated in the endometrium of RIF patients and plays an essential role in the decidualization of human endometrial stromal cells (HESCs). However, less is known about the function of EHD1 in the endometrium during embryo implantation.

Study design, size, duration: After approval from the Ethics Committee of Nanjing Drum Tower Hospital (2013-081-01), endometrial specimens were collected from women who received treatment at the Reproductive Center of Nanjing Drum Tower Hospital from January 2020 to December 2021. Twelve RIF women and Twelve fertile normal control women were enrolled in the present study. Endometrium in the middle and late stages of secretion was obtained by aspiration and curettage 5-7 days after ovulation.