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Can low Vitamin D Binding Protein levels be a cause of infertility in females?

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Madam, Endometriosis is a chronic, debilitating gynecological condition characterized by existence of endometrial tissue at sites other than the uterine cavity. The presence of such tissue results in chronic inflammation at the site, which, in turn, results in adhesions and tissue scarring, distorting the woman's pelvic anatomy in its course. Such women present with pelvic pain, dysmenorrhea, dyspareunia and infertility.¹ Increased prevalence of endometriosis has been reported in infertile patients in comparison to the fertile patients.²

Vitamin D binding protein (DBP) has various functions in the body which include Vitamin D transport, activation of macrophages, binding to fatty acids and actin scavenging.³ Recent link between endometriosis and DBP with lower levels being found in infertile patients with endometriosis has also been explored.⁴ Macrophage activating factor (MAF) has been involved in the pathogenesis of endometriosis. In the peritoneal fluid, DBP gets converted to MAF (formation involves the cleavage of galactose and sialic acid residues by 3-galactosidase and a sialidase enzyme secreted by B and T lymphocytes).² Due to increased conversion to MAF in the peritoneal fluid, the levels of DBP are, therefore, found to be lower in females with endometriosis. Thus, DBP, when acting as MAF, forms one of the causative agents of infertility in females with endometriosis. One such study demonstrated low levels of DBP in all infertile patients. However, this inference can only be drawn once research is conducted on a larger scale with mechanistic explanation of results.⁵

Keywords: Vitamin D Binding Proteins, Infertility, Endometriosis, Macrophage activating factor.

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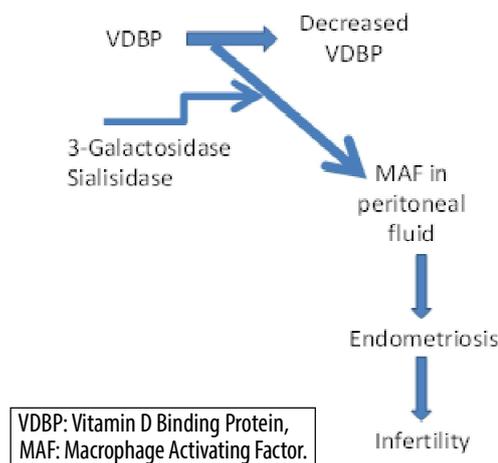


Figure: Role of Vitamin D binding protein in Endometriosis.

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Conflict of Interest: None to declare.

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