

Molecular factors in human implantation: adhesion molecules, proteases and cytokines

ABSTRACT

Successful human reproduction remains an enigma, but this is slowly changing in the current era of expanding scientific knowledge. The discovery of various molecular factors such as adhesion molecules, proteases and cytokines have in recent years been at the forefront of medical research. The growing importance of immunology in particular has led to novel new immuno-modulatory therapies and increasing research into this new aspect of reproductive immunology may well prove to be the most important breakthrough in understanding the fundamentals of human reproduction. Implantation represents the first step in the complex interactions and processes involved in foetal-maternal interaction, which continues throughout pregnancy gestation and culminates in the birth of an infant. It is therefore vital that we understand the myriad processes controlling implantation in order to build a firm foundation for exploring reproductive immunology research in the new millennium. This review brings together and presents an overview of the potential roles of currently known molecular factors such as adhesion molecules, proteases, cytokines and its interaction with the maternal immune response, incorporating the findings of previous published research performed by the author on cytokines and reproductive immunology.

Keyword: Adhesion molecules; Proteases; Cytokines; Pregnancy; Immunology; Implantation