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### The Immunology of pregnancy

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Pregnancy is an immunological balancing act in which the mother's immune system has to remain tolerant of paternal major histocompatibility (MHC) antigens and yet maintain normal immune competence for defense against microorganisms. The placenta separates fetal and maternal blood and lymphatic systems and it is fetal trophoblast that plays the major role in evading recognition by the maternal immune system. Trophoblast cells fail to express MHC class I or class II molecules and the extravillous cytotrophoblast cells strongly express the nonclassic MHC gene encoding HLA-G, which may downregulate natural killer (NK) cell function. In addition, the trophoblast expresses Fas ligand, thereby conferring immune privilege: maternal immune cells expressing Fas will undergo apoptosis at the placenta/decidua interface. A third protective mechanism exploited by the trophoblast is the expression of the complement regulatory proteins CD46, CD55, and CD59. Uterine

decidual and placental cells produce a huge array of cytokines which, in part, contribute to the deviation of the immune response from Th1 to Th2. This may leave the mother more open to infection whose control is Th1-dependent, but increased production of Th1 cytokines has been linked to spontaneous abortion and small-for-dates babies. This bias in cytokines and hormonally mediated effects on the thymus and on B cells may also contribute to the suppression of autoimmune responses and changes in circulating and local T-cell subsets in pregnancy.

#### Speaker Biography

Akinyemi Ayodeji Akinsanya American medical educator, physician, consultant. He did his scholar in University Lagos, 2008 and Proceeds to Newcastle University Medicine Malaysia to earn his doctorate. Bachelor of Science with honors, University of Lagos Bachelor of Medicine Bachelor of Science with honors, Doctor of Medicine, Newcastle University Medicine Malaysia 2012. Currently, working as a Medical resident health Hospital Igbobi Lagos and lecturer I Lagos state university junior lecturer, 2017.

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