

## **The mosaic of autoimmunity; Why we develop autoimmune diseases– the sex role**

**Yehuda Shoenfeld <sup>1</sup>**

<sup>1</sup> Sheba Medical Center, Dept. of Medicine B, Research Center for Autoimmunity

<sup>2</sup>Tel-Aviv University, Israel, Incumbent of the Laura Schwartz Kipp chair for Autoimmune

Autoimmune diseases are conditions in which the immune system damages normal components of the individual. Autoimmune diseases were found to be multifactorial in their etiology. For practical reasons these factors are classified into four categories: Genetic; which entail the MHC class I, II, and III. A case in point will be the haplotypes of HLA-DR3, B8 which are prevalent in many classical diseases. In addition Gm allotype, idiotypes and some complement deficiencies may have a genetic background. Immune deficiencies: C1q C2, C4 and IgA deficiencies are among the most common defects associated with diverse autoimmune conditions. Hormonal state: Most autoimmune diseases are detected in females at the child bearing ages. The role of estrogens will be delineated. Some diseases, such as SLE, thyroid AID diseases and PBC are prevalent in females in a ratio of 10:1 to males. Estrogen receptors are found on lymphocytes and they activate them. Androgens are applied for therapy. Castration of males and Klinefelter 's syndrome, lead to AIDs, while androgens can ameliorate the manifestations. AIDs of the Th1-type improve in pregnancy, while type II cause exacerbations. Contraceptives and IVF therapies may also exacerbate type II. The intricate relationships between estrogen and autoimmunity will be detailed. In addition other hormones play a role i.e. prolactin. Environmental causes: Those are the most important as a trigger factors. Conclusion: The type of disease in an individual, in an autoimmune prone family, will be determined by the specific combination of the different factors mentioned above.

