

ABSTRACT

Polycystic ovary syndrome (PCOS) is an endocrine disease caused by hormonal dysbalance. The main criteria for PCOS are hyperandrogenism, oligo-/anovulation and polycystic ovary. Almost 80 % of PCOS woman are also insulin resistance. Insulin resistance is a source of many health problems and diseases. This thesis aims to explore hyperinsulinemia as a consequence of insulin resistance. Hyperinsulinemia ensues as a compensation for high level of glucose in bloodstream because of insulin resistance. High levels of insulin overstimulate steroidogenesis in follicular cells such as theca cells and granulosa cells. Futhermore, hyperinsulinemia leads to follicular arrest, which can result in infertility. The main aim of this thesis is to summarise information found in scientific publication about hyperinsulinemia in connection with the ovarian cycle and PCOS, including a description of the signaling pathway of insulin in the ovary. Moreover, it aims to compare the ovarian cycle and follicle maturation of healthy woman and woman with PCOS, including pathophysiology such as hyperandrogenism, polycystic ovaries and anovulation.