Abstract
Aim: The aim of the review is to highlight the difference in pathogenesis and mechanisms of underlying infertility in peritoneal and ovarian endometriosis, which may affect oocyte quality and endometrial receptivity.
Design: Review article.
Materials and methods: A thorough literature search was carried out utilizing search engines such as pubmed, and google scholar. Using key words endometriosis, infertility, endometrial receptivity, In-vitro fertilization, failed implantation, embryo quality, we've searched original animal and human studies, clinical reviews in order to obtain available research and practice based studies including available recommendations as well as controversies that exist in current research.
During the literature search about 400 articles were found, then the suitable articles were selected and reviewed.
Discussion: Patients with endometriosis have poor reproductive outcomes both in natural cycles and in those undergoing assisted reproduction. Patients with endometriosis not only have poor oocyte and embryo quality but also demonstrate lower implantation rates. Various studies have focused on the pathogenesis of failed implantation in patients with endometriosis at the cellular and genetic levels. It is of vital importance to understand the mechanisms of reduced endometrial receptivity and lower oocyte quality in patients with endometriosis, and to be able to differentiate the pathogenetical mechanisms of ovarian and peritoneal endometriosis.
Conclusion: It is widely evident that endometriosis affects fertility; and based on scientific evidence in animal and human models one could emphasize that different stages of the disease alters the normal reproductive physiology in various ways. Endometriosis affects both endometrial receptivity and oocyte quality, in different stages. Ovarian and peritoneal endometriosis seems to have different mechanism and pathogenesis though each could alter the endometrial receptivity in different manner and different stages of the process. Ovarian endometriosis can definitely impact ovarian reserve both by mechanical distortion and compromised oocyte quality at a cellular and molecular level ultimately affecting implantation. Peritoneal endometriosis may compromise endometrial receptivity and embryo quality by oxidative, immunological and genetic pathways. Though controversies exist in the management of infertility involving the two types of endometriosis, IVF-ET is still considered the standard of care until better innovations emerge to understand and diagnose the disease. Extensive research is still required in understanding the mechanisms of insult factors which alter the endometrial receptivity and lower the oocyte quality in patients with endometriosis and develop markers to predict the implantation potential leading to improved outcomes.