



Curcumin is Effective in Improving Folliculogenesis Profile and Oocytes Quality in Vitro in Ectopic Endometriosis Mouse (*MusMusculus*) Models

Aulia Firmawati¹, and Widjati²

¹Department of Veterinary Reproduction, Faculty of Veterinary Medicine, Brawijaya University

²Department of Embryology, Faculty of Veterinary Medicine, Airlangga University

Abstract:Endometriosis is the presence of ectopic endometrial tissue, such as that outside the uterine cavity, which can cause chronic inflammatory reactions. Curcumin is one of traditional herbal medicines that is widely used. Some experiments have managed to find a mechanism to treat an ectopic endometriosis through the mechanism of suppression of several cytokines such as TNF-alpha, NF-kB and COX-2.

This study was an experimental laboratory study, with five treatments and six replications, using female mice (*Musmusculus*) that had reached puberty. The study consisted of three phases: the first phase was the microscopic examination of in vitro oocytes quality, and the second was histopathological examination of folliculogenesis profile using Hematoxyllin eosin staining.

The results of this study showed significant difference between positive control group (P0) with treatment and negative control (KN) groups in folliculogenesis profile ($p < 0.05$). Examination of in vitro oocytes quality showed significant difference between positive control group with treatment group and negative control group ($p < 0.05$). Curcumin has several roles in cytokines modulation in ectopic endometriosis mouse models. Curcumin may reduce the occurrence of apoptosis of granulosa cells so that it may directly improve oocyte quality and folliculogenesis profile.

In conclusion, curcumin effectively overcomes fertility problems through the mechanism of cytokines modulation that plays a role in some cases of endometriosis such as: TNF-alpha, NF-kB and COX-2. Curcumin may improve folliculogenesis profile and in vitro oocytes quality.

Keywords : ectopic endometriosis, curcumin, folliculogenesis profile, oocyte quality.