

Abstract

Polycystic Ovary (PCO) is a set of several follicles, which is oval-shaped fluid-filled sac inside a woman's ovaries. These follicles each month will be released when the fertile period, but not all made it out of the ovarian follicle. Remaining follicles in the ovary will swell over time and if the number reached more than 12 pieces and measuring 2-9 mm, is called as PCO. If a woman has in her ovaries PCO, most likely woman will suffer from Polycystic Ovary Syndrome (PCOS), which can lead to infertilas, which is a condition where a woman can't get pregnant and give birth to a child. One way to detect PCO is by examining the ultrasonography image of her ovaries. This is performed by a doctor manually, but in fact, there are several factors that lead to a diagnosis doctors sometimes wrong doing, one of them is the human error factor. Therefore, it will be created a system which can automatically detect the PCO.

The method used to make this automatic detection system is by using a region growing area to make preliminary estimates follicle, then follicle grows into an actual form of the ultrasound image and measure the diameter and the number of follicles that have been segmented by using euclidean distance, so it will be known whether there PCO or not in the ovaries.

Testing results show that the detection of PCO using this system is able to produce a success rate of detection of the number of follicles (RF) of 71.09%, the error rate detection number of follicles (MRF) of 22.51%, and error rate of follicle diameter (MRFD) of 17.81%.

Keywords: *polycystic ovary, region growing, euclidean distance, image processing*