

Abstract

Polycystic Ovary Syndrome (PCOS) is the most common endocrine disorder in women of reproductive age. PCOS gets a lot of attention when couples complain because the pregnancy did not come (infertility). One of the diagnostic criteria for a woman with PCOS, doctors manually analyze ultrasound images of ovaries for detection of number and size of follicles within the ovary. Things like this may lead to problems of the variability, reproducibility and low efficiency.

To overcome these problem, an automatic scheme is proposed to detect the PCOS on ultrasound image. Firstly, determine the initial homogeneous regions. Then, these initial regions are grown into an actual follicles controlled by average gray-level and gradient weighted on region growing method. The next stage determine regions that probably correspond to the criteria of the follicles. Finally quantifying attributes of the segmented regions as follicles using stereology. Attributes were measured the number and size regions of follicles to determine image into categories are: PCOS present and PCOS Absent.

The results show that the detection PCOS using this procedure was able to achieve the correct rate detection the number of follicles (RR) of 78%. Compared with the result obtained the expert validation the error rate size of follicles (MR) of 12% and detection error rate of follicles (FR) of 20%.

Keywords: *polycystic ovary syndrome, region growing, stereology, segmented follicles.*