ABSTRACT

The development of medical technology today requires us to create an innovation, as well as the detection method of the type of tumor in the thyroid gland, the analysis conducted by doctors based on a sample of tissue preparations. Previous research using a microscope that is visually seen by human eyes. Therefore need to be made a tool which can classify the type of tumor tissue samples based on an image quickly and automatically, in order to obtain an accurate analysis and evidence.

Design of a tumor detection system using a method based on digital image processing such as cutting the image, the median filter, and edge detection. Having obtained the characteristics of the network image is then classed image using the Threshold method. The process starts from the input image processing image data, preprocessing consists of converting to grayscale, cropping, converting to a binary image, and the elimination of noise with a filter. Furthermore, after preprocessing the image is processed ready for collection information. The process of image processing is done is openning and labeling, of this process obtained extensive information on the capsule and invasion of follicular thyroid gland. Once information is obtained then the image is ready to be classified, then do a comparison between manual and automatic classification results.

The tests on this system using two kinds of parameters, namely window size variation and the adaptive threshold value C, and Structuring Element (SE) radius in the process of openning. The best accuracy rate obtained by the system when ws = 12 c = 0.02 and SE radius (R) for follicle is 9 and for capsule is 2 is equal to 100% in 10.118737 seconds of computing time.

Keyword : Pathology Anatomy, Thresholding, Adaptive Threshold, Microscopic