ABSTRACT

STUDY COMPARISON OF THE INFLUENCE OF THE DECREASE OF kV AGAINST DOSE AND IMAGE QUALITY FROM MULTIPLE MODALITIES OF MULTI DETECTOR CT SCAN


This study aims to know the effect of a decrease in the 120 kV, 100 kV and 80 kV the estimated value of DLP (Dose Length Product) and image quality in CT 16 slice, 64 slice and 128 slice by applying the same parameter values on several factors eksposi (mA), pitch, beam width and rotation time.

The method used in this research is a comparative descriptive method with quantitative approach, using 3 kV different variations on CT Scan 16, 64 and 128 slice and produce nine samples. With media research is a head phantom. Positioning the head phantom on the examining table and set center point like a CT scan of the head. Next, fill the experimental data, each experiment 1, 2, and 3. Then change the 3 kV different variations and fills the same parameter values on each trial. After the scanning process.

As a proof based on the calculation results can be seen that the "Sig" is smaller than the error rate (α) = 0.05 then it can be concluded that refused so with a confidence level of 95% can be said that kV significant effect on DLP on CT Scan 16, 64 and 128 slice. While the image quality assessment questionnaires to PPDS Radiology can be concluded that the results of the assessment questionnaires in terms of resolution and the anatomical structure of the bones clearly with the largest average are at 120 kV with the criteria of excellent results and vice versa average yield was lowest for the 80 kV with poor results as well.

From the results of this research can be concluded that the decline kV have an impact on the estimated value of DLP. So, the smaller kV is given, then the estimated value of DLP is getting smaller. And the greater the value of kV is given, then the greater the estimated value of DLP.

Keyword: kV, mA, pitch, beam width, rotation time, DLP, Slice