

# Korelasi ukuran bidimensional dengan volume tumor primer karsinoma nasofaring menggunakan computed tomography scan = Correlation between bidimensional and volume measurement of the primary tumour of nasopharyngeal carcinoma using computed tomography scan

Asih Maratani, author

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## Abstrak

Latar belakang: Pengukuran tumor primer karsinoma nasofaring (KNF) belum rutin dikerjakan karena bentuknya yang ireguler dengan infiltrasi yang ekstensif pada jaringan sekitarnya. Pengukuran volume memiliki akurasi tinggi namun sulit dilakukan dan memerlukan waktu lama. Lebih lanjut, belum ada penelitian yang membandingkan antara teknik pengukuran bidimensional dengan volume tumor primer KNF di Indonesia.

Tujuan: Mendapatkan nilai korelasi ukuran bidimensional terhadap volume tumor primer KNF pada pemeriksaan Computed Tomography (CT) scan.

Metode: Penelitian ini menggunakan desain potong lintang dengan metode simple random sampling. Subjek penelitian berjumlah 50 pasien KNF yang menjalani pemeriksaan CT scan nasofaring di Departemen Radiologi FKUI/RSUPN CM. Penelitian dilakukan sejak Juni hingga September 2015. Pengukuran volume tumor primer nasofaring pada PACS INFINITT dilanjutkan dengan pengukuran bidimensional satu minggu kemudian.

Hasil: Uji korelasi Spearman antara ukuran bidimensional dengan volume KNF memperlihatkan nilai  $p < 0,001$  dan  $r = 0,9$ , dengan formula regresi volume tumor primer =  $- 11,38 + (1,97 \times \text{ukuran bidimensional})$ .

Kesimpulan: Terdapat korelasi positif sangat kuat antara ukuran bidimensional dengan volume KNF.

.....Background: Primary tumour measurement of the nasopharyngeal carcinoma (NPC) has not been routinely performed because of its irregular shape and extensive infiltration to adjacent structures.

Measuring the volume is highly accurate yet highly difficult and time-consuming. Moreover, there has not been comparison study between the bidimensional and volume measurement of the primary tumour of NPC done in Indonesia before.

Purpose: To obtain the correlation value of the bidimensional measurement to the volume of the primary tumour of NPC using the CT scan.

Method: This study used a cross-sectional design. Fifty subjects were chosen using simple random sampling from NPC patients that underwent nasopharyngeal CT scan at the Radiology Department of the Indonesia University's Faculty of Medicine/Cipto Mangunkusumo Hospital. This study was done from June until September 2015. NPC volume measurement was performed using PACS INFINITT, followed by the bidimensional measurement one week after.

Results: Spearman correlation test between bidimensional and volume measurement of NPC shows  $p \text{ value} < 0.001$  and strength of correlation ( $r$ ) = 0.9, with regression formula of the primary tumour volume =  $- 11.38 + (1.97 \times \text{bidimensional measurement})$ .

Conclusion: There is a very strong positive correlation between bidimensional and volume measurement of NPC.