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# Non-contrast low-dose CT can also be available for volumetry in ADPKD patients

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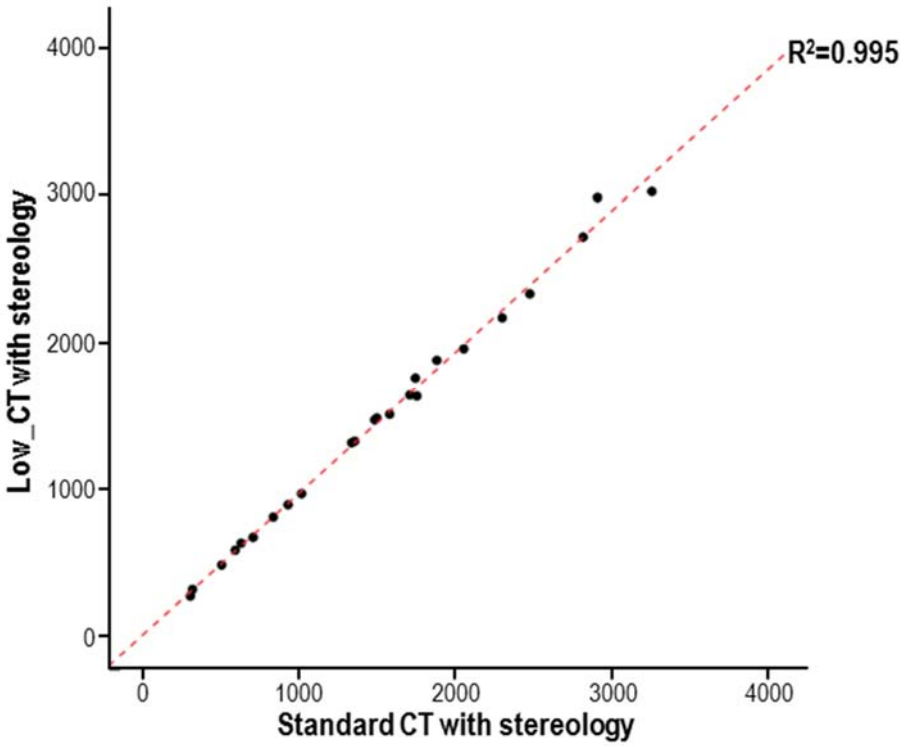
**Objectives:** Measurements of kidney volume are important for the diagnosis, prognosis, and evaluation of the effects of drugs (tolvaptan)[오전 1] in autosomal dominant polycystic kidney disease (ADPKD). Non-contrast computed tomography (CT) is commonly used for volumetry, and this study demonstrated that low-dose CT can be used for volumetry as an alternative to standard-dose CT.

**Methods:** Axial images of standard-dose and low-dose CT with 1-mm slices were obtained from 24 ADPKD patients. The kidney volume was measured using Synapse 3D software through stereology. The volume measurements from both sets of images were compared using $R^2$, Bland-Altman plots, and intra-class correlation coefficient (ICC) s.

**Results:** Patients' mean age was 48.4±10.9 years, and 45.8% (n=11) were men. The mean total kidney volume on standard-dose CT was 1501±838.2 mL. The $R^2$ of volume using standard-dose and low-dose CT was 0.995. In the Bland-Altman plot, except for one large volume, the two measurements were consistent, and the ICC was also high (0.998). The CT radiation dose (dose-length product, mGy·cm) from standard-dose CT was 229±68, and that of low-dose CT was 50±19. Comparable volumes were obtained using low-dose CT, with a dose reduction of about 20% relative to standard-dose CT.

**Conclusions:** Standard-dose and low-dose CT showed comparable kidney volume results in ADPKD patients. Therefore, low-dose CT can be used to minimize radiation exposure in ADPKD volumetry.

Correlation between standard and low dose CT




Bland-Altman plot of standard and low dose CT