Feasibility Of Very Ultra Low Dose CT Guided Lung Biopsy.

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The newly proposed ultra low dose (ULD) protocol for CT guided lung biopsy is proven to lower the radiation dose. The question is “how low the exposure feasible for CT guided lung biopsy”. In this pilot study, we postulate that the dose protocol can be lower than 100kv, 7.5MAs for lesions more than 3 cm in size. We are planning to use 90Kv, or lower with 7.5 MAs or lower. The objectives are to determine the feasibility of the CT guided lung biopsy of a large lung lesion with size >3cm using this new protocol, to measure effective dose exposure to the patients; to evaluate the image quality, length of procedure, and success rate, CT guided procedure will be done on a 128-DECT scanner (Somatom Sensation Flash, Siemens Medical Solutions). Computer generated analysis of the CT Dose Index (CTDI), dose length product will be reviewed. For entrance surface dose, We will use Optically stimulated luminescence (OSL) dosimeter and or TLD detectors. These detectors will be placed that all organs within the primary beam were covered.The entrance surface dose will be calculated accordingly.Image quality, length of procedures, technical success, size of the lesion, location and complications will be evaluated in each patient. We anticipate that the very low dose CT guided lung biopsy is feasible in lesions larger than 3cm.