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A reduced dose of iodinated contrast medium can be used in CT pulmonary angiography without adversely affecting image quality

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A good quality negative CT pulmonary angiogram (CTPA) can reliably exclude the presence of pulmonary emboli. In order to obtain good quality studies without unduly increasing the risk of contrast mediated nephrotoxicity one must aim to achieve optimal opacification of the pulmonary arteries using the minimum dose of contrast medium. This study aims to demonstrate that a smaller volume of a more concentrated contrast medium can be used to achieve a lower iodine dose without adversely affecting the quality of the images obtained. The CTPA images for 69 consecutive patients who received 100mL of Optiray 300 and 70 patients who received 75mL of Optiray 350 were reviewed. The degree of opacification in the pulmonary trunk and right and left main pulmonary arteries was measured in terms of Hounsfield Units (HU). Data regarding patient's age, sex and weight was obtained from the hospital records. The groups did not differ significantly in terms of age, sex distribution or weight. Mean opacification in the pulmonary trunk was greater in the 75mL group (365 HU vs 331 HU) although this was not quite statistically significant ($p=0.0546$). This was despite the mean dose of iodine being lower in this group (26.2g vs. 29.5, $p=0.0001$). There was no increase in the number of investigations considered non-diagnostic (defined as opacification of less than 250HU in pulmonary trunk) in the 75mL group. Use of the low dose technique, whilst conferring patient safety and cost saving benefits, is not associated with a deterioration in the pulmonary artery opacification of CTPA investigations or an increase in the number of suboptimal studies.

Biography

Jamal Abdulkarim finished his radiology training in university hospitals of Leicester UK and obtained the FRCR. Currently he is a consultant Radiologist at George Eliot Hospital. He has interest in research particularly in the field of intravenous iodinated contrast media where he had published and presented several papers over the last few years.

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