Triple-rule-out angiografija kompjutoriziranom tomografijom za evaluaciju akutne boli u prsima

Triple-rule-out CT angiography for evaluation of acute chest pain

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KLJUČNE RIJEČI: triple-rule-out, CT angiografija, koronarna bolest srca, plućna embolija, bolest aorte.

KEYWORDS: triple-rule-out, CT angiography, coronary artery disease, pulmonary embolism, aortic disease.

CITATION: Cardiol Croat. 2014;9(9-10):339.

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UVOD: Triple-rule-out (TRO) angiografija kompjutoriziranom tomografijom (CT) pruža mogućnost da se istovremeno i brzo procijene značajne promjene na koronarnim arterijama, plućna embolija i bolesti aorte te promjene susjednih intratorakalnih struktura kod pacijenta s akutnom boli u prsima.

PRIKAZ METODE: TRO CT angiografija je najprikladnija za pacijente koji imaju niski do srednji rizik za akutni koronarni sindrom i čiji se simptomi mogu također pripisati akutnim patološkim promjenama aorte ili pulmonalnih arterija. Pravilni srčani ritam je važan čimbenik u kvaliteti koronarne CT slike, iako noviji CT skeneri s više redova detektora omogućavaju brzo i kvalitetno ECG bazirano snimanje. Apliciranje jodiranog kontrastnog sredstva (100 ml) omogućava simultano arterijsko bojenje u području koronarnih arterija i aorte (300 HU) te plućnih arterija (200 HU). Kako bi se ograničila izloženost zračenju, TRO CT pregled ne uključuje cijeli prsni koš, ali je potrebno obuhvatiti luk aorte i cijelo srce. Parametri skeniranja uključuju prospektivnu ECG modulaciju cijevi i prospektivni ECG *gating* sa *step and shoot* tehnikom kako bi se smanjila izloženost zračenju (optimalno, 5 – 9 mSv).

INTRODUCTION: CT angiography "Triple Rule Out" (TRO) provides the ability to simultaneously and rapidly evaluate for significant coronary artery disease, pulmonary embolism, and aortic disease and adjacent intrathoracic structures for the patient with acute chest pain.

EVALUATION OF A METHOD: TRO CT is most appropriate for the patient with low to intermediate risk for acute coronary syndrome and whose symptoms may also be attributed to acute pathologic conditions of the aorta or pulmonary arteries. Although regular cardiac rhythm remains an important factor in coronary CT image quality, newer CT scanners with more detector rows afford rapid electrocardiographically (ECG) gated imaging. Injection of iodinated contrast material (100 mL) is tailored to provide simultaneous levels of arterial enhancement in the coronary arteries and aorta (300 HU) and in the pulmonary arteries (200 HU). To limit radiation exposure, the TRO CT examination does not include the entire chest but is constrained to incorporate the aortic arch down through the heart. Scanning parameters, including prospective ECG tube current modulation and prospective ECG gating with the *step and shoot* technique, are tailored to reduce radiation exposure (optimally, 5 – 9 mSv).

LITERATURE

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RECEIVED:
September 22, 2014