DIGITALNA SUBTRAKCIJSKA ANGIOGRAFIJA S CO_2

DIGITAL SUBTRACTION ANGIOGRAPHY WITH CO_2

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IZVLEČEK

Uvod in namen: Zaradi odsotnosti alergijskih reakcij in ledvične toksičnosti je CO_2 kot kontrastno sredstvo alternativa jodovi raztopini pri izvajanju digitalne subtrakcijske angiografije spodnjih okončin. Uvedba CO_2 v klinično prakso je bolnikom z zmanjšano ledvično funkcijo in prijavljeno alergijo na jodovo kontrastno sredstvo omogočila izvedbo minimalno invazivnega diagnostičnega in terapevtskega postopka.
Metode: S tem prispevkom bom predstavil prve izkušnje zaposlenih na Oddelku za klinično radiologijo Univerzitetnega kliničnega centra Republike Srbske v Banja Luki ter oceno kakovosti slik, pridobljenih med postopki, in njihovo primerjavo s slikami, pridobljenimi z jodovim kontrastnim sredstvom. Poleg ocene kakovosti pridobljene slike se bomo v prispevku osredotočili tudi na nekatere druge parametre, ki lahko vplivajo na izvedbo samega postopka. Ti parametri so: kakovost opacifikacije (motnosti) krvne žile s kontrastnim sredstvom, hitrost in praktičnost postopka, biološke lastnosti CO_2 in njegov vpliv na bolnika, združljivost z napravo ter ekonomska upravičenost.
Rezultati: Prednosti CO_2 so manjše tveganje za alergijske reakcije in nefrotoksičnost, možnost uporabe večje količine kontrasta v primerjavi z jodom, enaka tehnična zahtevnost uporabe kontrasta, medtem ko je negativna stran trenutno enaka ali morda manjša ekonomska donosnost. Povprečno trajanje diagnostičnega posega je bilo približno 20 minut, kar je enako kot pri uporabi joda in približno 20 % več od skupnega trajanja postopka pri uporabi joda pri angioplastiki.
Razprava in zaključek: CO_2 je varno in učinkovito kontrastno sredstvo in je ustrezna alternativa jodovi raztopini pri digitalni subtrakcijski angiografiji pri bolnikih, ki imajo kontraindikacije za njeno uporabo.
Ključne besede: CO_2, ogljikov dioksid, jodno kontrastno sredstvo, opacifikacija, digitalna subtrakcijska angiografija

ABSTRACT

Introduction and purpose: Due to the absence of allergic reactions and renal toxicity, CO_2, as a contrast medium, is an alternative to iodine contrast medium when performing digital subtraction angiography of the lower extremities. The introduction of CO_2 into clinical practice made it possible for patients with reduced renal function and a reported allergy to iodine contrast agent to undergo a minimally invasive diagnostic and therapeutic procedure.
Methods: Through this paper, I will present the initial experiences of the employees at the Department of Clinical Radiology of the University Clinical Centre of Republika Srpska, Banja Luka, and the evaluation of the quality of the images obtained during the procedures and their comparison with the images obtained using an iodine contrast medium. In addition to the evaluation of the quality of the obtained image, the paper will focus on some other parameters that can affect the performance of the procedure itself. These parameters are: the quality of the opacification of the blood vessel with the contrast agent, the speed and practicality of the procedure, the biological properties of CO_2 and how it affects the patient, compatibility with the device and economic profitability.
Results: The advantages of CO_2 are the reduced risk of allergic reactions and nephrotoxicity, the possibility of the application of a larger amount of contrast compared to iodine, the equal technical complexity of contrast application, while the negative side is currently a lower economic profitability. The average duration of diagnostic intervention was about 20 minutes, which is the same amount as in the application of iodine, and about 20% longer than the total duration of the procedure when using iodine when angioplasty is performed.
Discussion and conclusion: CO_2 is a safe and effective contrast agent and is an adequate alternative to iodine contrast agents in digital subtraction angiography in patients who have contraindications for its use.
Keywords: CO_2, carbon dioxide, iodine contrast agent, opacification, digital subtraction angiography

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