

Digital subtraction angiography with carbon dioxide

 Ognjen Aćimović*

University Clinical Centre of
the Republic of Srpska, Banja
Luka, Bosnia and Herzegovina

KEYWORDS: carbon dioxide, contrast agent, digital subtraction angiography.

CITATION: *Cardiol Croat.* 2024;19(3-4):149. | <https://doi.org/10.15836/ccar2024.149>

***ADDRESS FOR CORRESPONDENCE:** Ognjen Aćimović, Petra Rađenovića 27, 78000 Banja Luka, Republic of Srpska, Bosnia and Herzegovina. / Phone: +387-66-919-999 / E-mail: ogiacimovic@gmail.com

ORCID: Ognjen Aćimović, <https://orcid.org/0009-0003-0945-8309>

Because of its high rate of solubility and rapid diffusion through the lungs, carbon dioxide (CO₂) is safe for intravascular use. Due to the absence of allergic reactions and renal toxicity, CO₂, as a contrast medium, is an alternative to iodine contrast medium when performing digital subtraction angiography of the lower extremities. The introduction of CO₂ 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.

Through this lecture, I will present the initial experiences of the employees at the Department of Clinical Radiology of the University Hospital of the Republic of Srpska, Banja Luka, and the evaluation of the quality of the images obtained during the procedures and their comparison with the images obtained with iodine contrast medium. In addition to the evaluation of the quality of the obtained image, the paper will pay attention to some other parameters that can affect the performance of the procedure itself. These parameters are the quality of opacification of the blood vessel with the contrast agent, the speed and practicality of the procedure, the biological properties of CO₂ and how it affects the patient, compatibility with the device and economic profitability.^{1,2}

RECEIVED:
October 22, 2023

ACCEPTED:
October 27, 2023



LITERATURE

1. Ali F, Mangi MA, Rehman H, Kaluski E. Use of carbon dioxide as an intravascular contrast agent: A review of current literature. *World J Cardiol.* 2017 Sep 26;9(9):715-722. <https://doi.org/10.4330/wjc.v9.i9.715>
2. Cho K, Hawkins IF, Peterson G, Kyung Cho, Irvin F. Hawkins. Carbon Dioxide Angiography: Principles, Techniques, and Practices 1st Edition. CRC Press. 2007.