

Parts A, B, and C in the box below must be completed.

A. Submission Category: (See instructions).

Scientific Paper/Poster Poster Only

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B. Subject Code: Circle the code (one only) that best categorizes your abstract.

Vascular Imaging

- 1. Angiography
- 2. Ultrasound / CT
- 3. MR Imaging / MR Angiography

Vascular Intervention

- 4. Arterial Recanalization / PTA / Stents
- 5. Aneurysm / Dissection
- 6. Arterial Fibrinolysis/ Thrombectomy
- 7. Portal Hypertension

8. Embolization

- 9. Central Venous Intervention
- 10. Thromboembolic Disease / Filters
- 11. Central Venous Access

Non-vascular Intervention

- 12. Hemodialysis Access
- 13. Biliary / Gallbladder
- 14. Gastrointestinal
- 15. Genitourinary

Other

- 16. Cardiac / Chest
- 17. Carotid and neurointerventions
- 18. Pediatric Intervention
- 19. Cancer Therapy / Chemoembolization
- 20. Transplantation
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C. Keywords: Provide 3 keywords that best describe your abstract. Use only keywords from the back of the RSNA Index to Imaging Literature.

1. Carbon dioxide 2. Gadolinium 3. Angiography

Title of Paper Abstract **“Hybrid” Lower Extremity Arteriography Utilizing Iodinated Contrast or Gadodiamide to Supplement CO₂ Arteriography in Patients With Renal Insufficiency: A Preliminary Report**

PURPOSE: To determine if small amounts of nonionic contrast (NIC) when used to supplement carbon dioxide (CO₂) angiography in patients with peripheral vascular disease (PVD) and renal insufficiency (RI) result in significant worsening of renal function compared with angiograms performed with and without gadodiamide (Gd).

METHODS: Thirty-seven consecutive lower extremity arteriograms were performed in 32 patients with RI (baseline serum creatinine < 1.5 mg/dl) using CO₂ alone or CO₂ supplemented with either NIC or Gd (up to 0.3 mmol/kg) as needed to include run-off vessels to the foot and obtain pre and post-angiograms at the site of an intervention. Serum creatinine (Cr) levels were obtained pre-procedure (pre) and at 48 hours post-procedure (post). The peak Cr level was also determined for patients with a significant (> 0.5 mg/dl) Cr elevation.

RESULTS: Thirty-seven lower extremity angiographic procedures (15 diagnostic and 22 diagnostic/interventions) were performed in 32 patients with a mean Cr pre of 2.39 mg/dl and a post mean Cr of 2.64 mg/dl. Thirteen procedures (6 interventions) were performed utilizing CO₂ and NIC in patients with a mean pre Cr of 2.28 mg/dl and a mean post Cr of 2.62 mg/dl. Five of these 13 patients (38%) demonstrated a Cr increase > 0.5 mg/dl at 48 hours. The mean pre Cr in these patients was 2.28 mg/dl, and the peak post Cr equaled 3.48 mg/dl. Seven procedures (2 interventions) were performed with CO₂ alone on patients with a mean pre Cr of 2.30 mg/dl and a mean post Cr of 2.3 mg/dl. Seventeen procedures (13 interventions) were performed with CO₂ and Gd in patients with a mean pre Cr of 2.52 mg/dl and a post mean Cr of 2.80 mg/dl. One out of 17 patients (5.8%) demonstrated an increase in Cr > 0.5 mg/dl at 48 hours, with a pre Cr of 3.3 mg/dl and a peak post Cr equal to 6.1 mg/dl. The difference between the pre Cr for each group (CO₂ + NIC, CO₂, CO₂ + Gd and the 5 patients who significantly increased their Cr following NIC) was not statistically significant (p = 0.299). The number of patients who developed worsening renal function (5/13) in the NIC group compared with the CO₂ and CO₂/Gd group (1/24) is statistically significant (p = 0.04). The average volume of supplemental contrast was similar in the NIC and Gd groups (52 mg vs. 56.5 mg, respectively). The average volume of supplemental NIC in the 5 patients who increased their Cr was 44.6 ml (range 33-55 ml).

CONCLUSION: The use of small volumes of NIC to supplement CO₂ angiography in patients with PVD and RI appears to increase the risk of worsening renal function when compared to CO₂ angiograms performed with and without Gd.

Deadline: This application must be received by October 9, 1998.

Please send completed abstract and Financial Disclosure form to:

SCVIR—1999 Abstracts, 10201 Lee Highway, Suite 500, Fairfax, VA 22030.

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*What was done of Bd. — Where injected
 Did try dilute NIC*