Use of ARROW GPS Cath in a Diabetic Patient Population with impaired renal function

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DISCLOSURES:
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• Abbott Vascular: Consultant
• BARD/Clearstream: Consultant
• COOK: Consultant
• Covidien/EV3: Proctor
• Boston Scientific: Proctor
• Medtronic-Invatec: Consultant
BACKGROUND: CIN and DM

**CIN =** increase in serum Cr >25%

30% of Type 2 DM patients developed CIN in our Center and more than 50% had a renal function worsening
Sodium bicarbonate prophylactic therapy in the prevention of contrast-induced nephropathy in patients admitted to the intensive care unit of a teaching hospital: a retrospective cohort study.

Lefel N1, Janssen L2, le Noble J1, Foudraine N1.

Abstract

BACKGROUND: Intravenously administered iodine-containing contrast medium (CM) is associated with the development of contrast-induced nephropathy (CIN). Data on the effectiveness of sodium bicarbonate therapy in the prevention of CIN are controversial. Furthermore, the incidence of and risk factors for CIN in intensive care unit (ICU) patients are poorly defined. We investigated the effectiveness of sodium bicarbonate prophylaxis and the incidence of and risk factors for CIN in a heterogeneous ICU population.

METHODS: This retrospective cohort study included patients admitted to the ICU in 2009-2011 who received CM for computed tomography (CT).

Prophylactic sodium bicarbonate therapy did not prevent CIN in our patients,

(13 %) and no prophylaxis was administered 100 times (87 %). CIN developed in 12 and 13 % of these cases, respectively (NS). In 95 CIN patients with a GFR <60 mL/min, 17 of 33 (51.5 %) cases receiving prophylaxis developed CIN and 27 of 63 (42.9 %) cases not receiving prophylaxis developed CIN (NS). Prophylactic sodium bicarbonate therapy did not prevent CIN in our patients, irrespective of pre-existing renal failure. Pre-existing renal impairment (odds ratio 4.41), an elevated Acute Physiology and Chronic Health Evaluation (APACHE) IV score (odds ratio 1.02), and higher haemoglobin levels (odds ratio 0.64) were significant and independent risk factors associated with the development of CIN.

CONCLUSIONS: Prophylactic isotonic sodium bicarbonate was not associated with a decreased incidence of CIN in ICU patients. Current sodium bicarbonate prophylaxis guidelines cannot be generalized to a heterogeneous ICU population. Pre-existing renal impairment was associated with the highest CIN risk.

KEYWORDS: Contrast-induced AKI; Contrast-induced nephropathy; ICU; Prophylactic therapy
RATIONALE and Indications for Renal Function Prevention

- N-Acetylcysteine protocol

Evaluation of the protective effect of N-acetylcysteine on contrast media nephropathy.

Pezeshgi A¹, Parsamanesh N², Farhood G², Mahmoodi K².

Author information

Abstract

RESULTS: There was no significant difference between intervention and control groups at baseline (P > 0.05).

PATIENTS AND METHODS: This study was a prospective, randomized, double-blind clinical trial on 150 patients who underwent coronary angiography. The study was carried out on patients undergoing coronary angiography. Patients were randomly assigned into 2 groups of intervention group and control subjects. Intervention group took NAC 600 mg orally twice a day. It was administered one day before angiography and continued until the second day after angiography. Control subjects received saline only. Serum creatinine was measured before and three days after coronary angiography.

RESULTS: There was no significant difference between intervention and control groups at baseline (P > 0.05). However, there was a significant decline in creatinine level among NAC patients (P = 0.001). Saline group had significantly higher proportion of nephropathy cases than NAC patients.

Conclusion: We found that the consumption of NAC is useful for contrast induced nephropathy (CIN) prevention.

KEYWORDS: Acute kidney injury; Contrast agents; Contrast induced nephropathy
• Minimizing CM dose reduces CIN;
• It is very difficult to approach long CTO in BTK;
• When using microcaths or balloons directly wire needs to be removed;
**Limitation in poor cooperative patients (leg movements)**
The Arrow GPS Catheter

Saline and Contrast Preparation of the balloon
The Arrow GPS Catheter

Visiovalve system
The Arrow GPS Catheter

- 0.014 wire, 4 Fr;
- Good profile, braided shaft;
- Large range of sizes and lengths;
B.B. 81 yo
DM, Ischemic Heart Disease, CRI 1,9 mg/dl; Non healing TMA
• **Visipaque 270 diluted 50% amount for diagnostic Angio = 36 ml**
Clinical Cases

Arrow GPS 1,5 x 20 mm, Visipaque 270, 1 ml 50%; 0,014 Pilot in place
Clinical Cases

Contrast medium Total amount 42 ml, 50% diluted
R.G.
DM, Cr = 2 mg/dl
non healing TMA

CO₂ angio not efficient for the poor cooperation
Clinical Cases

1.5 mm GPS
Subintimal Progression Failure in PT
Intraluminal Successful AT
Clinical Cases

- Final Results: Contrast Medium total amount: 6ml
Clinical Cases: CO2 + GPS + Contrast Medium

S.C.
DM, Cr= 2,2 mg/dl
non healing TMA
Clinical Cases: CO2 + GPS + Contrast Medium

CO2 angio and recanalization through Arrow GPS 1,5 mm x 20 mm, transloop wire in place
Clinical Cases: CO2 + GPS + Contrast Medium

1 ml Contrast Injection through Arrow GPS 1,5 mm x 20 mm, transloop wire in place.
Total amount: 4 ml
Conclusions

• Diabetic CLI patients with CRF are a big challenge;
• Endovascular treatments should be performed with the less amount of contrast medium;
• Arrow GPSCath by Teleflex should be considered a great tool in our experience especially associated to CO2 angio.
Thanks for your attention
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