



J Emerg Trauma Shock. 2017 Jan-Mar; 10(1): 48–49.
doi: [10.4103/0974-2700.199523](https://doi.org/10.4103/0974-2700.199523)

PMCID: PMC5316798

Contrast-induced nephropathy and allergic reaction in patients who were given intravenous contrast material in emergency department

[İbrahim Caltekin](#), [Pınar Yeşim Akyol](#),¹ [Fatih Esad Topal](#),¹ [Arif Karagöz](#),² and [Erden Erol Ünlüer](#)¹

Department of Emergency Medicine, Malatya State Hospital, Malatya, Turkey E-mail: drcaltekin@gmail.com

¹Department of Emergency Medicine, İzmir Katip Çelebi University Atatürk Research and Training Hospital, İzmir, Turkey

²Department of Emergency Medicine, Karşıyaka State Hospital, İzmir, Turkey

Received 2016 May 31; Accepted 2016 Jun 10.

Copyright : © 2017 Journal of Emergencies, Trauma, and Shock

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

Dear Editor,

In recent years, contrast materials (CMs) are widely used in the patients to whom imaging methods are applied for diagnosis and treatment as a consequence of the increase observed in the utilization of computed tomography.[1] Short-term and long-term side effects and even death are seen depending on the utilization of iodinated CM. Contrast-induced nephropathy (CIN) is the most significant side effect of those media.[2] Acute allergic reactions are the complications which are known to develop after the utilization of intravenous CM, and they may cause mild symptoms such as urticaria and itching, or they may result in severe outcomes such as cardiopulmonary arrest and death.[3]

A total of 1463 patients were scanned retrospectively. In 13 (0.88%) of 1463 patients, allergic reaction developed, and in 37 (9.39%) of the patients included in the CIN group (394 patients), CIN developed.

There is no specific treatment for CIN; however, hemodialysis can be used if clinically necessary.[4] Many treatments such as hydration, sodium bicarbonate, theophylline, N-acetyl cysteine (NAC), ascorbic acid, and adenosine antagonists have been tried for prevention of CIN. The most effective method for preventing CIN is adequate hydration.[5]

When prophylactic implementations were analyzed after CM application in the emergency department, statistically significant difference was determined in CIN development rates between the groups according to the distribution of hydration supply rates ($P < 0.05$). Statistically, significant difference was not recorded between the groups in terms of NAC ($P > 0.05$).

CIN risk factors should be taken into account in every procedure in which CM is administered to the patient, and necessary CIN minimizing protocols such as hydration should be applied for the patients who are under risk. CIN development is related to the physical and chemical properties and the amount of CM as well as the risk factors of the patients. The treatments of the patients developing CIN result in social and economic burdens due to the need for chronic hemodialysis, prolonged hospitalization, delay in the implementation of surgical and preventive procedures, and/or intensive care follow-ups, and an increase may be even seen in the mortality rate. It should be remembered that (1) CM implementation may trigger allergic reactions, (2) it may cause life-threatening situations such as anaphylaxis, (3) these situations prolong the duration of hospitalization and the treatment period, and (4) they may result in additional costs.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Stacul F. Managing the risk associated with use of contrast media for computed tomography. *Eur J Radiol.* 2007;62:33–7.
2. Mitchell AM, Jones AE, Tumlin JA, Kline JA. Incidence of contrast-induced nephropathy after contrast-enhanced computed tomography in the outpatient setting. *Clin J Am Soc Nephrol.* 2010;5:4–9. [PMCID: PMC2801649] [PubMed: 19965528]
3. Wysowski DK, Nourjah P. Deaths attributed to X-ray contrast media on U.S. death certificates. *AJR Am J Roentgenol.* 2006;186:613–5. [PubMed: 16498085]
4. Thomsen HS, Morcos SK. Contrast media and the kidney: European Society of Urogenital Radiology (ESUR) guidelines. *Br J Radiol.* 2003;76:513–8. [PubMed: 12893691]
5. Mautone A, Brown JR. Contrast-induced nephropathy in patients undergoing elective and urgent procedures. *J Interv Cardiol.* 2010;23:78–85. [PubMed: 20465721]

Articles from Journal of Emergencies, Trauma, and Shock are provided here courtesy of **Medknow Publications**