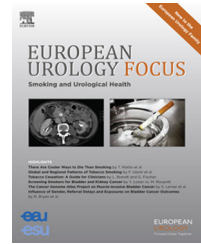


available at [www.sciencedirect.com](http://www.sciencedirect.com)  
journal homepage: [www.europeanurology.com/eufocus](http://www.europeanurology.com/eufocus)



Brief Correspondence

## Incidence of Adverse Contrast Reaction Following Nonintravenous Urinary Tract Imaging

Robert H. Blackwell<sup>a,b,\*</sup>, Eric J. Kirshenbaum<sup>a</sup>, Matthew A.C. Zapf<sup>c</sup>, Anai N. Kothari<sup>b,d</sup>, Paul C. Kuo<sup>b,d</sup>, Robert C. Flanigan<sup>a,b</sup>, Gopal N. Gupta<sup>a,b,d</sup>

<sup>a</sup>Department of Urology, Loyola University Medical Center, Maywood, IL, USA; <sup>b</sup>1:MAP Surgical Analytics Group, Loyola University Medical Center, Maywood, IL, USA; <sup>c</sup>Stritch School of Medicine, Loyola University Medical Center, Maywood, IL, USA; <sup>d</sup>Department of Surgery, Loyola University Medical Center, Maywood, IL, USA

### Article info

#### Article history:

Accepted January 17, 2016

#### Associate Editor:

James Catto

#### Keywords:

Adverse drug reaction  
Contrast media  
Hypersensitivity  
Urography

### Abstract

Adverse reactions (ARs) to intravenous (IV) radiographic contrast range from mild urticaria to life-threatening anaphylaxis. Intraluminal contrast dye is routinely used in the urinary tract with a minimal perceived risk of AR. We used the Healthcare Cost and Utilization Project State Inpatient Databases for California and Florida from 2007 to 2011 to identify patients who received urinary tract contrast dye for retrograde pyelography, percutaneous pyelography, retrograde/other cystogram, and ileal conduitogram. After excluding patients who had received IV contrast for other radiologic studies, ARs to contrast were identified by a composite end point of diagnoses not present on admission including shock, anaphylaxis, iatrogenic hypotension, urticaria, angioedema, laryngospasm, laryngeal edema, and/or a new diagnosis of contrast reaction. Overall, 76 174 patients were included who had undergone non-IV urinary tract imaging, 367 (0.48%) of whom developed an AR. On multivariate analysis, receipt of contrast in the lower urinary tract (odds ratio [OR]: 1.8;  $p = 0.04$ ) or upper urinary tract by retrograde pyelography (OR: 1.6;  $p = 0.04$ ) or antegrade pyelography (OR: 2.0;  $p = 0.007$ ) increased the risk of AR compared with control patients. The use of contrast dye in the urinary tract is associated with a low, but present risk of AR.

**Patient summary:** We looked at patients who underwent a urologic procedure using radiographic contrast media in the urinary tract. Although adverse reactions (ARs) may occur with the use of contrast media in the urinary tract, these reactions are experienced by a minority of patients (approximately 1 in 200). In addition, we found that an allergy to intravenous contrast does not increase a patient's risk of an AR to contrast within the urinary tract.

© 2016 European Association of Urology. Published by Elsevier B.V. All rights reserved.

\* Corresponding author. Department of Urology, Loyola University Medical Center, 2160 S. First Avenue, Fahey Center, Room 261, Maywood, IL 60153, USA. Tel. +1 708 216 5100; Fax: +1 708 2161699.

E-mail address: [rblackwell@lumc.edu](mailto:rblackwell@lumc.edu) (R.H. Blackwell).

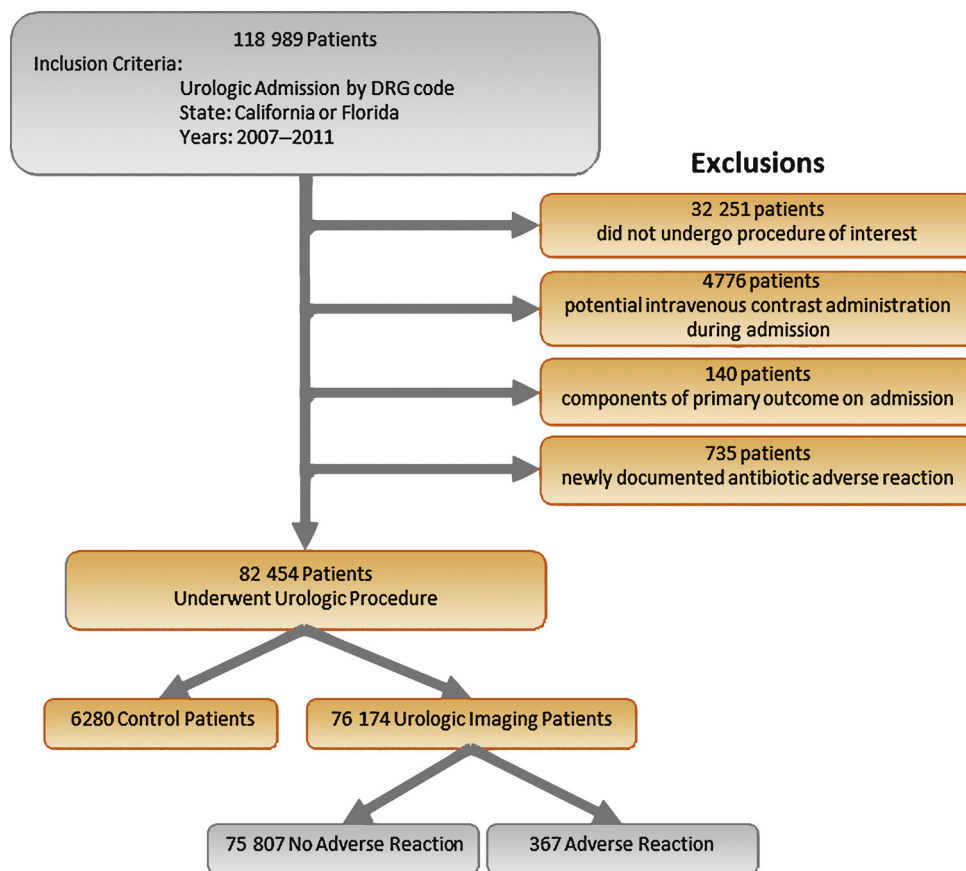
The use of radiographic iodinated contrast (IC) in diagnostic imaging continues to increase, with >75 million procedures occurring annually worldwide [1]. The risk of an adverse reaction (AR) to intravenous (IV) administration of IC was reported as 1–12% and ranges in severity from mild and

self-limited urticaria to severe life-threatening anaphylactoid reactions [1,2] with mild, moderate, and severe reactions occurring in 15%, 1–2%, and 0.2% of cases, respectively [3,4].

Although predominantly occurring following IV administration, several reports of AR with administration of

<http://dx.doi.org/10.1016/j.euf.2016.01.009>

2405–4569/© 2016 European Association of Urology. Published by Elsevier B.V. All rights reserved.



**Fig. 1 – Patient characteristics.**  
DRG = diagnostic related group.

intraluminal IC in the urinary tract exist [5–8]. The use of IC is common during diagnostic imaging procedures of the urinary tract with minimal concern for AR because it is generally considered a safe alternative to IV administration even in patients with a history of radiographic contrast allergy. The current estimated rate of AR from urinary tract IC administration comes from a single retrospective review of 783 patients, 2 (0.26%) of whom developed anaphylactic reactions following either voiding cystourethrography or retrograde pyelography [6].

We sought to determine whether the use of IC in urologic procedures is associated with AR and which urologic procedures increase that risk and to establish an expected rate of AR with the administration of IC in the urinary tract. We performed a cross-sectional retrospective review using the Health Care Utilization Project State Inpatient Database (HCUP SID) for California and Florida (2007–2011). HCUP SID includes deidentified patient discharge records for all payers including >100 clinical and nonclinical variables [9] and the ability to differentiate new diagnoses versus those present on admission. Patients included for analysis were admitted under the diagnostic related group code for a urologic diagnosis and underwent urinary tract imaging as identified by corresponding International Classification of Diseases, 9th Revision (ICD-9) procedure codes for retrograde

pyelogram, percutaneous pyelography, retrograde/other cystogram, and ileal conduitogram. Figure 1 summarizes the patients' characteristics. Supplementary Table 1 presents the ICD-9 diagnosis codes, procedure codes, and AE codes used. Modeling our methods after those that have been previously described to control for confounding from IV IC administration [10], we excluded patients who had undergone angiography, computed tomography, or intravenous pyelography during their admission. The primary outcome of interest was a composite of AR diagnoses that could be attributed to the administration of IC into the urinary tract including anaphylaxis, shock, iatrogenic hypotension, urticaria, angioedema, laryngospasm, laryngeal edema, and/or a new diagnosis of contrast reaction. Patients with any of these diagnoses present on admission were censored from the analysis, as were patients with a diagnosis of a new antibiotic reaction that could also account for components of the composite end point. A control group of patients who underwent cystoscopy with or without bladder biopsy, suprapubic aspiration, and/or suprapubic tube placement was identified to assess the baseline risk of the primary outcome of interest without the administration of urinary tract IC.

Baseline patient demographic characteristics and medical comorbidities were identified for all patients by chronic condition indicators and included age, gender, race, primary

Download English Version:

<https://daneshyari.com/en/article/5729672>

Download Persian Version:

<https://daneshyari.com/article/5729672>

[Daneshyari.com](https://daneshyari.com)