

Use of iodinated contrast media in imaging procedures appears to affect thyroid function

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Exposure to iodinated contrast media during imaging procedures is associated with changes in thyroid function, and increased risk of developing hyperthyroidism, according to a report in the January 23 issue of *Archives of Internal Medicine*.

"Iodinated contrast media (ICM) are commonly administered pharmaceutical agents," the authors write as background information. ICM are frequently used in scans and imaging procedures such as [cardiac catheterization](#) and computed tomography (CT scans). "Although certain complications of ICM (e.g., contrast-induced nephropathy) have been extensively studied, there has been little examination of the effect of ICM on [thyroid function](#)."

Connie M. Rhee, M.D., and colleagues from Brigham and Women's Hospital and Massachusetts General Hospital, Harvard Medical School, Boston, examined data from patients treated between January 1990 and June 2010 who did not have preexisting [hyperthyroidism](#) or [hypothyroidism](#). Patients were matched with euthyroid (normal thyroid function) controls, and [exposure](#) to iodinated contrast media was assessed using claims data.

A total of 178 patients with incident hyperthyroidism and 213 patients with incident hypothyroidism were matched to 655 and 779 euthyroid persons, respectively. The authors found that iodinated contrast media exposure was associated with incident hyperthyroidism, but no statistically significant association was found with incident

hypothyroidism.

Secondary analysis indicated an association between iodinated contrast media exposure and incident overt (clinical; diagnosed based on characteristic clinical features) hypothyroidism and incident overt (clinical) hyperthyroidism.

"In summary, these data support association between ICM exposure and incident hyperthyroidism, incident overt hyperthyroidism and incident overt hypothyroidism," the authors conclude. "Given the pervasive use of ICM in contemporary practice and the known sequelae of thyroid functional derangements, further studies are needed to confirm and evaluate generalizability of these findings, to establish causality and to explore mechanisms."

In an accompanying invited commentary, Elizabeth N. Pearce, M.D., M.Sc., of Boston University School of Medicine writes that Rhee et al "describe significant associations between contrast exposure and the development of hyperthyroidism. While no overall association exists between contrast exposure and all forms of hypothyroidism, an association was noted when cases were restricted to those with overt hypothyroidism."

"These data represent an important contribution to our knowledge about a clinically relevant and understudied area," Dr. Pearce writes. "Rhee et al have demonstrated that a relatively large proportion of individuals who developed iodine-induced thyroid dysfunction were not known to have underlying risk factors. Therefore, patients who may be particularly unable to tolerate thyroid dysfunction, such as those with underlying unstable cardiovascular disease, are also good candidates for monitoring of [thyroid](#) function after iodine exposure."

More information: *Arch Intern Med.* 2012;172[2]:153-159.

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