

FROM THE LITERATURE

Each month the editor of Newsline selects articles on diagnostic, therapeutic, research, and practice issues from a range of international publications. Most selections come from outside the standard canon of nuclear medicine and radiology journals. These briefs are offered as a monthly window on the broad arena of medical and scientific endeavor in which nuclear medicine now plays an essential role.

Methimazole Pretreatment in ^{131}I Therapy

Szumowski et al. from the Medical University of Białystok (Poland) reported on October 4 ahead of print in *Endocrine* on a study assessing the effect of pretreatment with methimazole on the efficacy of ^{131}I therapy in patients with nontoxic multinodular goiter. The study included 31 such patients who were scheduled for ^{131}I treatment to reduce thyroid volume. Participants were divided into 2 groups who received either 10 mg methimazole or a placebo for 6 wk, followed 4 d later by ^{131}I . The therapeutic activity of ^{131}I was constant for all participants (800 MBq) and was repeated every 6 mo or until thyroid volume was reduced below <40 mL. In the methimazole-pretreated group, ^{131}I uptake was increased to approximately twice that in the placebo-treated group. Only 4 patients from the methimazole-treated group required additional radioiodine doses, compared with 10 from the placebo-treated group. Median times until thyroid volume decreased below 40 mL were 9 mo (range, 6–12 mo) in the pretreated group and 18 mo (range, 14–22 mo) in the placebo-treated group. At 2-y follow-up after ^{131}I , the occurrence of hypothyroidism did not

differ significantly in the 2 groups. The authors concluded that radioiodine treatment of nontoxic multinodular goiter “preceded with appropriate application of methimazole is efficient thanks to increased radioiodine uptake, shorter period of treatment, and lower frequency of ^{131}I administration, without an increase in the incidence of post-treatment hypothyroidism.”

Endocrine

PET and Enteric Cholinergic Neuropathy in Diabetes

In an article e-published on October 8 ahead of print in *Neurogastroenterology and Motility*, Klinge et al. from Aarhus University Hospital/Aarhus University and Herning Regional Hospital (both in Denmark) used ^{11}C -donepezil PET/CT imaging to compare cholinergic innervation in the gut in patients with diabetes mellitus and in healthy controls. The study included 19 individuals with type 1 diabetes mellitus and related gastrointestinal symptoms as assessed by a questionnaire and 19 age- and sex-matched healthy controls. Participants with diabetes had significantly increased small intestinal wall volume and reduced ^{11}C -donepezil uptake on PET compared with controls. A similar pattern was found in the colon. Participants with diabetes also were found to have significantly reduced pancreatic volume and reduced tracer uptake in the pancreas and in the adrenal gland. The authors concluded that when “assessed with ^{11}C -donepezil PET/CT, patients with diabetes mellitus and severe bowel symptoms have reduced cholinergic innervation of the gut, indicative of parasympathetic denervation.”

Neurogastroenterology and Motility

$^{99\text{m}}\text{Tc}$ -MIBI SPECT/CT Presurgical Localization of Parathyroids

Zeng et al. from the First Affiliated Hospital of Nanjing Medical University/Jiangsu Province Hospital, Nanjing Medical University, and the Henan Provincial People's Hospital/People's Hospital of Zhengzhou University (all in China) reported in the November issue of *Renal Failure* (2019;41[1]: 885–892) on an investigation of whether $^{99\text{m}}\text{Tc}$ -MIBI SPECT/CT can enhance preoperative localization of parathyroids. The retrospective study included the records of 569 patients with secondary hyperparathyroidism who had undergone $^{99\text{m}}\text{Tc}$ -MIBI SPECT/CT and/or $^{99\text{m}}\text{Tc}$ -MIBI scintigraphy for preoperative parathyroid localization, followed by successful parathyroidectomy. The patients were divided into 2 groups: those who had undergone preoperative $^{99\text{m}}\text{Tc}$ -MIBI scintigraphy ($n = 175$) and those who had undergone both $^{99\text{m}}\text{Tc}$ -MIBI scintigraphy and SPECT/CT imaging ($n = 394$). The authors found that overall sensitivity and consistency were greater in the group that had undergone both types of imaging, with no differences in specificity noted between the 2 groups. Sensitivity and consistency in the lower glands were higher than in upper glands in both groups. The sensitivity for eutopic parathyroid was higher in the group with both types of imaging, with no differences between the groups for ectopic parathyroid. The authors concluded that “ $^{99\text{m}}\text{Tc}$ -MIBI SPECT/CT can increase the sensitivity and consistency of pre-operative localization of eutopic parathyroid glands, and it can accurately locate ectopic parathyroid without sensitivity improvement.”

Renal Failure