C-14-Urea Breath Test: A New Product and a Word of Caution

TO THE EDITOR: We read with great interest the article by Desroches et al. (*1*) concerning the validation of the ^{14}C-urea breath test (UBT) for the detection of *Helicobacter pylori* infection. Using 185 kBq (5 μCi) ^{14}C-urea in liquid form, the authors demonstrated sensitivity, specificity and accuracy of 98%, 95% and 97%, respectively, compared with histology and microbiology.

At our institution, we also used a liquid-based ^{14}C-UBT for many years. We performed a comparison study of the liquid ^{14}C-UBT (370 kBq [10 μCi]) with the then-investigational capsule-based test (37 kBq [1 μCi]), with very favorable results (*2*). The capsule-based test subsequently received U.S. Food and Drug Administration approval (May 1997) and currently is manufactured by Tri-Med Specialties (Lenexa, KS) as PY Test.

We feel there are several advantages to the PY Test kit, including its commercial availability, no risk of spills, reduced interference by oral flora, simpler breath collection, shorter test duration and a lower radiation dose to the patient than the liquid form. In our opinion, the reasonable price of the PY Test capsules made switching from the liquid- to the capsule-based test cost-effective.

As Warwick pointed out in his 1996 letter to the editor (*3*), nonfasting is an important pitfall in the ^{14}C-UBT. We would like to report another potential pitfall: one of our patients (Patient 1) complained of difficulty swallowing the ^{14}C-urea capsule, despite our routine use of 30 ml water × 2. The patient was retested 6 wk later, this time without any difficulty swallowing. Another patient (Patient 2) reported no difficulty swallowing the capsule but had a history of gastroesophageal reflux. The results of both patients are shown in Table 1. Although the manufacturer recommends only a 10-min breath sample collection, we prefer collecting an additional sample at 15 min postingestion. As in these cases, the additional sample may alert the interpreting physician to a problem with capsule swallowing or slower capsule dissolution in the stomach and avoid a false-negative test result.

TABLE 1
Patient Results

Patient	Test	Net dpm		
		10 min*	15 min	20 min
1	1	48	157	251
	2	1156	1098	—
2	1	12	386	—

*Reference range at 10 min: <50 dpm = negative; 50–200 dpm = indeterminate; >200 dpm = positive.
dpm = disintegrations per min; — = not done.

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Use of Perchlorate in Parathyroid Scintigraphy

TO THE EDITOR: I read with great interest the editorial by O'Doherty (*1*) and the articles by Chen et al. (*2*) and Fjeld et al. (*3*) regarding parathyroid scintigraphy. At Molde Hospital, Molde, Norway, we prefer to perform parathyroid imaging in a single day.

After initial thyroid scintigraphy (using pertechnetate), sodium perchlorate (200 mg) is injected intravenously to clear ^{99m}Tc-pertechnetate activity from the thyroid. Twenty minutes after the administration of the perchlorate, parathyroid imaging is performed by injecting 900 MBq ^{99m}Tc-MIBI. Planar images of the neck are obtained at 5, 30, 60 and 120 min. SPECT imaging of the chest is also performed.

Our experience with this procedure is excellent. There is sufficient clearing of the thyroid. In accordance with Fjeld et al. (*3*), we have seen early washout of ^{99m}Tc-MIBI in some patients with parathyroid adenoma. Although the affinity of the thyroid transport mechanism for pertechnetate is marginally greater than that for perchlorate, this is overcome by an appropriate dosage of perchlorate.

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