Quick cortisol assay improves speed, accuracy in adrenal vein sampling

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A quick cortisol assay using immunochromatography and gold nanoparticles can accurately determine plasma cortisol levels within 6 minutes without additional technical assistance, improving the rate of success in identifying adults with primary aldosteronism, according to results from single-center and multicenter studies.

Takashi Yoneda, MD, of the division of endocrinology and hypertension at the Graduate School of Medical Science at Kanazawa University in Japan, and colleagues analyzed data from participants in two studies. In a single-center study conducted at Kanazawa University Hospital, researchers enrolled 90 patients with primary aldosteronism (38 men; mean age, 54

years) randomly assigned to undergo adrenal vein sampling (AVS) with the quick cortisol assay, either semiquantitatively (n = 30) or quantitatively (n = 30), or without the quick cortisol assay (n = 30). In the multicenter study, researchers enrolled 293 patients with primary aldosteronism (143 men; mean age, 56 years) from seven medical centers randomly assigned to undergo AVS with semiquantitative quick cortisol assay (n = 148) or without (n = 145; controls). Researchers determined cortisol levels of all participants by the reference assay to evaluate quick cortisol assay assessments.

Cortisol concentrations significantly correlated with the conventional reference assay (P < .001). In the single-center study, the differences in the AVS success rates associated with semiquantitative and quantitative quick cortisol assays were not significant (both 93%); however, the success rates were higher than the rate of successful AVS performed without using the quick cortisol assay (63%; P < .001). The success rate of AVS performed in the multicenter study was 94% for the semiquantitative quick cortisol assay, which was higher than the rate for controls (60%; P < .001).

“Our new [quick cortisol assay] was faster and easier to perform than the previous [intraprocedural cortisol assay] and could be performed at the point of care and easily replicated,” the researchers wrote. “The measurement time for our [quick cortisol assay] was within 6 minutes, and the additional assistance of laboratory technicians was not required.” – *by Regina Schaffer*

Disclosure: Yoneda and three other researchers report receiving royalties for the technology transfer of the quick control assay from the Trust Medical Corporation in Kobe, Japan.

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