Clinical implications of home-based sperm testing

In the study by Samplaski et al. (1), the authors develop and validate a novel home-collected, mail-in semen analysis kit that can be analyzed up to 52 hours after collection. The challenges of mail-in tests are the time elapsed since collection and conditions to which the samples are exposed during transportation, both of which may impact the result. Using samples provided from 164 healthy men, the authors created an algorithm model to predict changes in semen samples over time. They concluded that this mail-in kit meets or exceeds laboratory standards.

The authors correctly note the barriers to in-office semen analysis, including physical access to laboratories, difficulty in providing a fresh sample through masturbation, and the current COVID-19 pandemic, which has mandated less physician-patient contact (1). Current at-home test kits are best suited for screening and identifying men who should seek professional workup. They also require considerable processing by the patient, which may lead to inaccurate results. The mail-in test presented in this manuscript appears to have better reliability and less room for error and importantly meets Clinical Laboratory Improvement Amendments standards (2).

The ability to perform at-home semen analysis testing has numerous clinical and patient implications, including reducing patient anxiety, improving convenience, and potentially the ability to see higher levels of patient compliance (3). Several areas for which at-home sperm testing can be valuable include the initial workup of infertility as a potential tool to identify whether an individual requires standard semen analysis or if additional investigations are required, postvasectomy testing, and routine testing that is required after vasovasostomy, vasoepididymostomy, or varicocelectomy.

Further, another clinically important implication of at-home testing is the potential for better standardization of results. Routine semen analysis is fraught with interobserver variability. As such, a centralized location for evaluation can minimize interobserver variability and, thus, improve the diagnostic utility of the test results (4). As we continue to see improvements in technology, novel semen analysis kits are providing patients with the ability to access their results immediately via their smartphones (5). This is an exciting time for the field of andrology and as new technologies develop, we must continue to ensure their accuracy to standard laboratory-based testing.

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