Review of: "Precision Medicine in Adult Obstructive Sleep Apnea and Home Diagnostic Testing: Caution in Interpretation of Home Studies Without Clinician Input Is Necessary"

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Diagnosis and therapy of adult patient with OSA is complex and should integrate clinical presentation, underlying complaints and comorbidities, specific anatomy and pathophysiology (such as levels of obstruction and potential generators of dynamic airway collapse during sleep), and patient's personal preferences. This complicated process is often based on a specialized multidisciplinary approach geared towards an evidence-based, nuanced and individualized plan of care. Currently, in Australia, HSAT is often performed without an a priori clinical review by a qualified SMP, which allows patient's presentation to a sleep center with the results of a HSAT, but without prior assessment by a sleep specialist. The process is coordinated by the GPs, who can refer patients for HSAT and further treatment, with referral to specialists only on a as needed basis. While this is considered a valid diagnostic and management pathway, allowing fast access and potentially a cost-effective way, this paper highlights some of the challenges that may derive from this 'one-size fits all' algorithm without specialist's input and without greater personalization of care. In this study, a total of 505 patients were referred for OSA management, with selection criteria and exclusions presented by the authors. Ultimately, level 2 HSAT was performed in 112/115 (97.4%) patients, with the remaining three patients undergoing level 3 studies. Interestingly, repeat evaluation with in-lab PSG was required in 46/115 (40.0%) of patients, of which 20/46 (43.5%) had OSA severity changed. Having the benefit of a SMP review significantly reduced significantly the need for repeat testing. Ultimately, 64 patients had a trial of PAP therapy, of which 29 (45%) without SMP supervision. Perhaps not unexpectedly, the coordination by SMP significantly improved patient acceptance of PAP as long-term therapy. The ENTS and SMP assessments resulted often in discovery of non-OSA related sleep disorders or had the severity of OSA changed in 55/115 (48%) patients. Overall, the clinical review by ENTS or SMP changed the management plan in 50/64 (78%) HSAT reports that made treatment recommendations. The SMP and ENTS are likely more nuanced in their evaluations, being able to discover non-OSA and additional sleep disorders such as insomnia and sleep related movement disorders, positional OSA, etc. Whether this affects long term patient outcomes (including cardiometabolic and neurological outcomes, sleepiness, or QoL) cannot be assessed by this study.

Level 2 HSAT is in fact an at home, unattended full polysomnography (PSG). If the level 2 HSAT has to be repeated in 46 patients (46/115=40% to 46/112=41% of included tests), this raises a significant issue: is the cost posed by sleep testing in this 'streamlined' process really lower? How about access of care as in therapeutic plan implementation? If it is delayed in >40% of patients (not even considering the lower adherence in those who were not seen by SMP or ENTS), how much

more benefit can it be gained from GP-driven indiscriminatory, Occam razor-based approach of testing in the other 60% of individuals? It remains the issue of referral bias – who is sent to the SMPs after initial ‘streamlined’ evaluation. And this cannot be answered by this study, but it points out that, when in doubt, perhaps the repeat test of choice should be a type I test, represented by an in-laboratory PSG.