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The Epidemiology of Sleepiness in Obstructive Sleep Apnea

Announcer:
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Dr. Malhotra:
Hi, my name is Atul Malhotra. I'm a Professor at University of California San Diego. And I'm going to talk today about The Epidemiology of Sleepiness in Obstructive Sleep Apnea.

I'll start out with a slide from the MedXCloud, which is an academic industry partnership. We published this a few years ago, suggesting about a billion people worldwide with obstructive sleep apnea based on existing data and extrapolations from existing data based on apnea-hypopnea index of 5. To use a stricter definition at 15, we're still talking about a half a billion people worldwide with obstructive sleep apnea.

It turns out that minority of these patients have sleepiness. If you look at the Terry Young study from *New England Journal,* 24% of men, 9% of women with an AHI over 5, but only 4% of men and 2% of women that had an AHI over 5 with sleepiness. These levels of figures have increased over time because new pandemic, the aging of the population, and improvements in oximetry and other technology. Bottom line is the minority of these patients actually have sleepiness. There's a major difference between clinic-based and community-based studies where the clinic-based ones tend to be more symptomatic.

If you look at CPAP in terms of a therapy, it does reduce subjective but not objective sleepiness. And I know that on this forest plot, the Epworth Sleepiness Score consistently improves across various studies in terms of subjective sleepiness. We feel like an objective sleepiness over here, they still sleep late and so really no improvement on the forest plot, suggesting CPAP reduces subjective but not objective sleepiness.

If you look at this French study, they started based on 602 sleepy patients. If you look at those that got CPAP, the Epworth went from 15 to 6, and so improvements in the majority of patients here, but still some with residual sleepiness over here. Even the ones who weren't sleepy at baseline, some of them develop sleepiness over time. And so, the bottom line here is that 58% of patients are sleeping at baseline in this French cohort, and 13% were still sleepy at follow-up, suggesting residual sleepiness is a real finding.

What do we do about it? Well, full disclosure, I was involved in some of the solriamfetol studies, and you do see improvements over time in the Epworth Sleepiness Score, the least squares change over here. And here's the Maintenance of Wakefulness Test over here. Placebo is shown here, doesn't do much. But with low doses or higher doses of solriamfetol, you do see improvements, nap or sleepiness score, you do see improvements in the sleep latency on the objective test here on the right. You see 150 and 300 mg look quite similar. But beyond that,

you do see a dose response improvement in terms of objective and subjective sleeping. If you look at the maintenance of efficacy over time, you can see in 40 weeks here, at 52 weeks here, both in people with sleep apnea, as well as in narcolepsy, sustained benefits over time. And if you look here at patients who are getting adherent or nonadherent with CPAP treatment, that is if they're using their

CPAP or oral appliance, whether patients are adherent or not, the efficacy of the solriamfetol is similar. If you look at difference shown here, the Patient Global Impression Index shown here, you can see with low doses of solriamfetol, minor improvements, bigger improvements with bigger doses, again, a dose response effect suggesting whether you're adherent or not with your CPAP treatment, there's improvements in this Global Impression Scale with solriamfetol. Again, sustained benefits shown here in this study, effects of solriamfetol long-term treatment patients with sleep apnea, whether adherent or nonadherent to airway therapy, that is typically at a CPAP. You can see sustained benefits over time that are maintained over time, whether adherent or nonadherent, they're superimposable.

So I'll summarize by saying sleep apnea is highly prevalent, and treatment is helpful. Nasal CPAP is the treatment of choice for obstructive sleep apnea, it works pretty well. It improves sleepiness, it improves blood pressure, it improves other findings. But residual sleepiness is real, so there are alternative and adjunctive therapies. Alternative therapies when CPAP is not for you, objective therapies if there's residual sleepiness, as we do see in some cases. The future is quite exciting because alternative treatments are emerging, pharmacotherapy, other things are quite exciting these days. And so it's a good place to be.

I'd like to thank the audience for listening. Thank you.

Announcer:
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