Reviewer's report

Title: Indacaterol improves lung hyperinflation and physical activity in patients with moderate chronic obstructive pulmonary disease - a randomized, multicenter, double-blind, placebo-controlled study

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Reviewer: Pierre-Regis Burgel

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Watz et al. performed a cross over study evaluating three periods of 21 days with indacaterol 150 microgr/day, placebo or open-label tiotropium in 129 subjects with mild to moderate airflow limitations. The authors confirmed that indacaterol and tiotropium reduced hyperinflation and that both treatment effects were within the same range. Measuring physical activity over 1 week with a Sensor armband in patients under indacaterol or placebo, the authors found increase in the number of steps/day (+10.9%; +722 steps) and in the number of minutes of at least moderate physical activity/day (+28 min; +29%).

Overall this is an interesting, well-conducted exploratory study. I have only minor comments:

1. The authors should provide information on the numbers of patients taking inhaled corticosteroids.

2. The use of physical activity in COPD trials corresponds to a recently introduced outcome that may be of major interest in clinical trials. Although differences in steps/day and minutes of at least moderate activity/day were statistically significant, and seems rather important in terms of magnitude of the effect, it is difficult to judge whether these improvements were indeed clinically significant. Is there any data in the literature on MCID for physical activity measurement? How much improvement in physical activity translates into better outcome?

3. Was there any correlation between reduction in IC and physical activity?

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests