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UROLOGY - LETTER TO THE EDITOR

Heart rate effects of antimuscarinic drugs

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Editor,

In their recent study, Cetinel et al. [1] assessed short-term changes in heart rate (HR) occurring in response to treatment with seven different antimuscarinic agents. Overall, 341 patients with overactive bladder were randomized. Ninety-one patients were lost during follow-up. A statistically significant increase in HR was observed in patients treated with non-selective antimuscarinic drugs when compared to those treated with selective drugs. The authors state that the drug-induced increase in HR was especially evident in patients treated with non-selective antimuscarinics and speculate that this can be considered as an unfavorable side effect.

In my opinion, the study has substantial limitations and shortcomings:

- High withdrawal rate of app. 27% and differences in gender distribution between the treatment groups may cause inhomogeneity despite randomization. Further, it has been suggested that > 20% loss poses serious threats to study validity [2].
- The description of the methods used to assess and to evaluate HR is insufficient. The accuracy and reproducibility of HR measurements were not assessed.
- No details regarding potential confounders (as relevant comorbidities and medication influencing HR) were reported.
- A resting baseline HR of app. 80/min (almost 50% of subjects had a HR > 80/min) is relatively high for otherwise normal subjects.

I do not believe that the conclusion drawn by the authors are justified.

- An abnormal HR over 100 beats/min was reported in the study with the frequency of 4–26% in the groups (Table 6). Even statistical difference was not reached between the groups (due to possible type II error), it cannot be concluded that there is no one. Paradoxically, the highest rate of tachycardia (25.8%) was reported with selective solifenacin. These finding raise doubts in the author's conclusion on significant increase in HR only with non-selective antimuscarinics. Tachycardia is an established cardiovascular risk factor and it should be discussed in this context.
- Studies that assessed the relationship between HR and survival were long-term studies (the observation period often exceeds 10 years). The clinical relevance of increase in resting HR by 4–9 beats/min for a limited period due to medication is not established. It is not clear whether the observed small drug-induced changes in HR persist on a long-term basis.
- Although several studies have shown that HR correlates with morbidity and mortality, the results are inconsistent and it remains unclear whether elevated HR is a risk factor or risk marker. Other factors, like physical fitness, play also a causative role. Therefore, those findings are not generalizable to the patients with increased HR due to medication. Further, up to date, the measurement of HR at rest has not been recommended by European and American guidelines on risk assessment of cardiovascular diseases.

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