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RESPONSE – UROLOGY LETTER

Re: Letter to editor: heart rate effects of antimuscarinic drugs

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Editor,

We thank Prof. Haverkamp for his interest in and for serious-minded comments on our article "Which antimuscarinic agents used in the treatment of overactive bladder increase heart rate? A prospective randomized clinical trial" [1].

In our study, patients who had not come to any one of the two control visits were accepted as loss to follow-up which was a different term than withdrawal. Since the urodynamic unit of our urology department has been a nation-wide referral center, one possible reason for the high loss to follow-up rate could be that some of the patients participated in the study had come from cities outside Istanbul. When Table 3 was examined in detail to compare the gender distribution of the drug groups, it could easily be seen that no statistically significant difference was found (p: 0.09).

Prior to heart rate measurement, our patients were rested in quite room for 10 min under the supervision of a specialized nurse without being allowed to perform any action that could affect blood pressure and heart rate (HR). This description can be found in the material method section of our article. The pulse oximetry device was developed in the 30s, and since the 80s, it has become an indispensable part of medical care to determine HR objectively. It is simple, cheap, and practical device that does not require special skills for its use [2–4]. In the design of our study, HR assessment and follow-up were planned with this device rather than traditional cumbersome methods because of the pre-mentioned advantages. Another alternative method for HR measurement is to use a 24-h Holter monitoring which is a more expensive and time-consuming method. We agree that to use Holter monitoring in the future studies will increase the accuracy of HR measurement.

Due to the limited space of journals, at present, scientific studies can be published with certain word and table boundaries. Due to the limited area, we have removed comorbidities and medications which was present in the first version of our manuscript. Patients with known cardiac disease or taking medications likely to cause an HR change were excluded from the study.

The normal HR is defined as 60–100 beats per min. There is no scientific base for the statement of Dr. Haverkamp that states 80 heart beat per min was relatively higher than normal [5]. In addition, the average HR values in the present study are consistent with other similar studies [6].

Table 6 shows the side effect profile of the patients. We agree that we must have used the term 'palpitation' instead of the term 'tachycardia', since tachycardia is a sign, while palpitation is a symptom. Table 6 shows only the symptoms of side effects rather than signs. In our study, g-power analysis was performed before the study to minimize the possible type 1 and type 2-error rate. The power of the study was determined as 0.80, the type 2 error rate was determined as 0.20, and the number of patients required for each drug was determined. As one author says, the clinician who wants to avoid type 1 and type 2 errors should not do this profession, because making and correcting errors are inherent to science [7]. Studies with larger sample size and increased power to evaluate and compare HR increases due to antimuscarinic drug use in overactive bladder treatment are needed.

It was stated that studies investigating the relationship between HR and survival should be long term. The main purpose of our study was not to reveal the relationship between HR and survival, but to determine the short-term effects of different antimuscarinic drugs on HR in patients with overactive bladder (OAB). The effects of HR increase on survival have been clearly demonstrated in long-term studies, which we have cited. It is the subject of future studies to investigate whether the differences occurring in a short period of time are likely to persist after a long period of time in patient using long-term antimuscaric drugs for OAB.

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Many studies in the literature revealed that HR increase was associated with morbidity and mortality. In addition, increased HR in patients with heart failure and vascular diseases has been associated with mortality [8, 9]. It has been shown that patients with OAB had more cardiovascular system abnormalities than the normal population [10]. The findings of HR increase in nonselective antimuscarinic drug treatment for OAB, which was clearly demonstrated in our study, should be taken into consideration when planning long-term OAB pharmacologic treatment.

References

1. Cetinel B, Onal B, Gultekin MH, Guzelsoy M, Turegun FA, Dincer M (2019) Which antimuscarinic agents used in the treatment of overactive bladder increase heart rate? a prospective randomized clinical trial. Int Urol Nephrol 51(3):417–424
2. Severinghaus JW (2007) Takuo Aoyagi: discovery of pulse oximetry. Anesth Analg 105(6 Suppl):S1–S4
3. Yetkin U, Karahan N, Gürbüz A (2002) Klinik Uygulamada Pulse Oksimetre. Van Tıp Dergisi 9(4):126–133 **(Article in Turkish)**
4. Ristikankare M, Karinen-Mantila H (2016) The role of routinely given hyoscine-N-butylbromide in colonoscopy: a double-blind, randomized, placebo-controlled, clinical trial. Scand J Gastroenterol 51(3):368–373
5. Kossmann CE (1953) The normal electrocardiogram. Circulation 8:920–936
6. Andersson KE, Sarawate C, Kahler KH, Stanley EL, Kulkarni AS (2010) Cardiovascular morbidity, heart rates and use of antimuscarinics in patients with overactive bladder. BJU Int 106(2):268–274
7. Rothman KJ (2010) Curbing type I and type II errors. Eur J Epidemiol 25(4):223–224
8. Tadic M, Cuspidi C, Grassi G (2018) Heart rate as a predictor of cardiovascular risk. Eur J Clin Invest 48:e12892
9. Ponikowski P, Voors AA, Anker SD, Bueno H, Cleland JG, Coats AJ, Authors/Task Force Members; Document Reviewers et al (2016) 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure: the task force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC). Developed with the special contribution of the Heart Failure Association (HFA) of the ESC. Eur J Heart Fail 18(8):891–975
10. Asche CV, Kim J, Kulkarni AS, Chakravarti P, Andersson KE (2012) Presence of central nervous system, cardiovascular and overall co-morbidity burden in patients with overactive bladder disorder in a real-world setting. BJU Int 109(4):572–580