

# Teneligliptin and “Thorough QTc study”: thorough enough?

This article was published in the following Dove Press journal:  
*Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy*

Samit Ghosal

Department of Endocrinology,  
Nightingale Hospital, Kolkata, India

## Dear editor

I read with interest the “Thorough QTc study” with teneligliptin by Erande et al<sup>1</sup>. It came as a surprise to me that the basic structure required to conduct such a trial as per the ICH E14 recommendations for the industry was not followed.<sup>2</sup> The recommended design to conduct such a trial was not universally followed (Table 1).

The original thorough QT/QTc study was conducted by the recommending authority (PMDA) in Japan using a dose range of 40 mg (therapeutic dose) and 160 mg (experimental dose) for teneligliptin compared to moxifloxacin 400 mg (active control dose).<sup>3</sup> The upper limit of 90% CI was more than 10 ms for the 160 mg dose in both sexes. More than 10 ms CI was also documented in females with the 40 mg dose, prompting the Japanese authorities to include this adverse event as a warning.

In view of the above-mentioned deficiency in the study design as well as reporting strategy, the data analyzed in the Erande et al, study can be considered as an effect of teneligliptin on QT interval and not a thorough QTc study.

I would be obliged if the following issues were adequately clarified with your involvement.

**Table 1** Requirements for a thorough QT/QTc study<sup>2</sup>

Recommended criteria	Erande et al, design <sup>1</sup>
• Randomized, placebo-controlled trial	• Open-labeled, non-placebo-controlled trial
• Requirement for active control arm (moxifloxacin)	• No active-controlled arm included
• The selected dose: 8–10 times the therapeutic dose	• Only therapeutic dose was used
• QTc calculated by Fridericia's or Bazett's correction	• QTc calculated by Bazett's correction
• QTc reporting: maximum difference with two-sided 90% confidence interval (CI). The upper level of 90% CI crossing 10 millisecond (ms) was considered as abnormal.	• QTc reporting: Mean ± SD

Correspondence: Samit Ghosal  
Department of Endocrinology,  
Nightingale Hospital, P-2 Surah 3rd Lane,  
Kolkata 700010, India  
Tel +91 967 432 8281  
Email ramdasghosal@gmail.com

## Disclosure

The author has no conflicts of interest to declare in this communication.

## References

1. Erande S, Sarwardekar S, Desai B. QT/QTc safety and efficacy evaluation of teneligliptin in Indian type 2 diabetes mellitus patients: the “thorough QT/QTc” study (Q-SET study). *Diabetes Metab Syndr Obes.* 2019;12:961–967. doi:10.2147/DMSO.S202458
2. Guidance for Industry. E14 clinical evaluation of QT/QTc interval prolongation and proarrhythmic potential for non-antiarrhythmic drugs. [Online] Available from: <https://www.fda.gov/media/71372/download>. Accessed 22, 2019.
3. Report on the deliberation result; 2012. [Online] Available from: <https://www.pmda.go.jp/files/000153594.pdf>. Accessed June 22, 2019.

Dove Medical Press encourages responsible, free and frank academic debate. The content of the Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy ‘letters to the editor’ section does not necessarily represent the views of Dove Medical Press, its officers, agents, employees, related entities or the Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy editors. While all reasonable steps have been taken to confirm the content of each letter, Dove Medical Press accepts no liability in respect of the content of any letter, nor is it responsible for the content and accuracy of any letter to the editor.

### Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy

Dovepress

### Publish your work in this journal

Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy is an international, peer-reviewed open-access journal committed to the rapid publication of the latest laboratory and clinical findings in the fields of diabetes, metabolic syndrome and obesity research. Original research, review, case reports, hypothesis formation, expert opinion

and commentaries are all considered for publication. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <https://www.dovepress.com/diabetes-metabolic-syndrome-and-obesity-targets-and-therapy-journal>