



COMMENT

Author's response regarding manuscript entitled “Electrocardiographic features at rest and during exercise in young adults born preterm below 30 weeks of gestation” and subsequent correspondence

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We read the letter by Bassareo et al.¹ that provides comments regarding our findings on electrocardiographic features of young adults born preterm.² We were surprised to find in the letter factual errors and comments suggestive of a low-quality work regarding our methodology and results.

First, Bassareo et al.¹ wrongly report that 38.7% of participants from our cohort were females and therefore that this could impact analyses and comparisons with other studies, especially the one by their group; in fact, as presented in the first table of the paper,² 61% of our cohort was female, and this proportion was similar between our preterm and term groups. All our statistical analyses

were adjusted for sex. It is possible that differences between our study and previous findings by Bassareo et al.³ can partly be explained by different proportion of sex among participants. However, we believe it is better to involve both sexes in similar numbers in groups that are compared in clinical studies, which was not the case in Bassareo's et al.'s study.³ Other numbers reported by Bassareo et al.'s letter¹ are factually inaccurate and should be corrected.

Second, based on the fact that some numbers in our tables were very similar between groups, Bassareo et al. suggest that we made mistakes in calculating the QT interval and in presenting the

Table 1. Corrected QT interval values in large studies from the literature.

Location	Population	Age, years (mean)	QTc, ms (mean)	QTc, ms (SD)	N	Reference
<i>General population studies</i>						
Switzerland	Male conscripts	19.2	394	22	41,767	⁵
Netherlands	SBP 90–99	22.5	412.6	21	28	⁶
	SBP 100–109	22.9	407.6	17	199	
	SBP 110–119	22.8	404.7	18	533	
	SBP 120–129	22.6	404.1	18	437	
	SBP 130–139	22.4	403.7	18	252	
USA	Male athletes	18.95	400	52	1288	⁷
	Female athletes		410	33	789	
<i>Preterm cohorts</i>						
Italy	Ex-ELBW	23.2	417.0	23.6	24	³
	Control	23.6	369.9	19.5	24	
Canada	Preterm—rest	24.2	408.3	33.5	49	²
	Preterm—peak exercise		386.6	33.8	38	
	Preterm—3-min recovery		417.6	35.4	35	
	Term—rest	23.9	409.2	30.7	53	
	Term—Peak exercise		387.5	23.0	41	
	Term—3-min recovery		409.0	33.5	43	

SBP: systolic blood pressure, range in mm Hg; ELBW: extremely low birth weight.

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results.¹ We here confirm that there was no mistake and we stand by our results. QT interval determination in our study was performed under the supervision of co-author Dr Abadir, an experienced electrocardiophysicist. All measurements were performed blinded to term/preterm status, as stated in the "Methods."² Blinding is essential for accuracy in measurements in clinical studies.⁴ Bassareo et al. do not report any blinding procedure in their study.³ Of note, QTc intervals at rest in our study were indeed remarkably similar between the two groups,² which can be expected from a tightly regulated physiological parameter. We did not include a decimal value in our table but are providing it now (Table 1) and compare them with other studies from the literature, conducted in very large cohorts of young adults. With the addition of a decimal value, none of the values are identical. As shown in the table, results from our control group (at rest) are very similar to those found in very large previous studies from Switzerland,⁵ the Netherlands⁶ and USA,⁷ suggesting proper measurement and analysis. Standard deviation in our study² was slightly higher than the two European studies^{5,6} but comparable to the American study.⁷

In contrast to all these studies, study by Bassareo et al. found a much lower QTc interval in the control group from their cohort, compared to data obtained from large population studies (Table 1). None of the participants from Bassareo et al.'s study³ had a QTc above the generally admitted normal limits for QTc intervals⁸ (450 ms for males and 460 ms for females in adults). In addition, one participant was excluded from their study because of a long QTc interval and was taking citalopram, and the study group of this participant was not mentioned. Lastly, regarding QTc measures, Bassareo et al.³ did not confront results obtained in their control group with the ones from other population studies.

Bassareo et al. provide five "impact" points in their letter.¹ The fifth point states: "QT tract, a well established marker of increased risk of developing potentially life threatening ventricular arrhythmias, is increased in these subjects." We are very surprised by this statement as our peer-reviewed findings published by *Pediatric Research* suggest the opposite. Because we² did not replicate findings by Bassareo et al.,³ we agree that larger multicentric collaborative studies should be conducted, as it is customary in such situations. Indeed, despite a rationale in studying long-term effects of preterm birth on cardiac conduction, there are only

our two contradictory studies on the subject. We thus object that there is any robust evidence to show any impact of preterm birth on cardiac QT interval. However, acceptance of other's contradictory findings is essential in conducting such collaborative studies, and we hope this response will satisfy Professor Bassareo and colleagues that more needs to be known on the issue.

AUTHOR CONTRIBUTIONS

A.F. and A.M.N. wrote the letter.

ADDITIONAL INFORMATION

Competing interests: The authors declare no competing interests.

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