Reply to Dr. Cysarz’s comment on Point:Counterpoint “Cardiovascular variability is/is not an index of autonomic control of circulation”

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TO THE EDITOR: In the frame of the Point:Counterpoint debate on cardiovascular variability analysis (5), the utility of non-linear tools has been highlighted (1). Actually, complexity-based and non-linear techniques allow aspects of cardiovascular dynamics hardly quantified by traditional approaches to be described, as recently shown (4). Notwithstanding research on these methods started long ago (3), complex mathematical formalisms and lack of standardization limited the diffusion of these techniques and thus full understanding of their clinical relevance. In this context, Dr. Cysarz mentions the potential utility of symbolic analysis to investigate accelerations and deceleration of instantaneous heart rate. This analysis is somewhat related to analysis of patterns, another non-linear approach that shares with symbolic analysis the advantage of providing simple and straightforward physiological interpretations. In this respect, we recall that a consolidated technique based on a joint pattern analysis of blood pressure and heart rate variability is the sequence technique (2) used to assess the features of baroreflex control of the heart. In this case, pattern analysis identifies runs of consecutive beats in which systolic blood pressure and R-R interval progressively and concomitantly increase or decrease. Information on baroreflex sensitivity and baroreflex effectiveness (2) are routinely derived from subsequent analyses of these patterns.

REFERENCES

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