Comment On: Method Of Automatic Determination Of The Heart’s Electrical axis in cardiological decision Support systems

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Introdution

Recently, Filatova Anna and Fahs Mohamad [1] published a paper describing a novel and admirably elegant method for calculating the mean electrical axis of the heart in the frontal plane. Their approach incorporates both novel hardware and software solutions. It is not within the scope of our report to comment on the complexity or elegance of their method. However, the authors, in reference to our previous works [2], listed the following equations:

\[\text{CardiacAxis} = \pm \arctan\left(\frac{aVF}{I}\right)\]

or

\[\text{CardiacAxis} = \pm \arctan\left(\frac{2 \times aVF}{\sqrt{(3) \times I}}\right)\]

Please note that we have adopted the nomenclature from the original paper in our reports for better understanding. They stated that the equations are “or,” which garnered our attention. These two equations are obviously different and simply cannot yield the same result in calculating the electrical axis. The first equation is an older one [2, 3], which is incorrect, and the second one corresponds to the corrected version, as described elsewhere [2] and evaluated subsequently [3, 4, 5].

During the development of the hardware and software for calculating the heart axis, one inevitably confronts various approaches. Therefore, the importance of introducing the corrected equation should be emphasized [3]. In cases where the axis is calculated from any combination of the limb leads (I, II, III), no correction is needed. However, if the axis is calculated from a combination of limb leads (I, II, III) and aVR, aVL, aVF, the equations should be adapted as we described elsewhere [2, 4]. This topic seems to us to be underestimated in the original publication [1].

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Not applicable.

References


