Haemodialysis increases QTc interval but not QTc dispersion in ESRD patients without manifest cardiac disease

Sir,

I read with interest the article by Covic and co-workers [1] showing that haemodialysis increases the QTc interval (mainly due to rapid changes in electrolyte plasma concentrations), but not QTc dispersion in uraemic patients without manifest cardiac disease. Indeed, studying QTc interval and QTc dispersion is of great importance because of their significance as risk factors that predispose to severe ventricular arrhythmias and sudden death, especially in dialysis patients. This article supports early findings that the QTc interval is connected to calcium plasma levels [2–4]. Moreover, it is well known that calcium plasma levels can be predicted using special formulae that include the QTc interval [3,4]. It is also proposed that the QTc interval might be used as a marker of venous tone reactivity in dialysis patients [5].

However, there is a problem in the exact interpretation of the QTc interval and QTc dispersion that I discussed in 1995 [6]. The problem is in defining the end of the T wave: is it the time the T wave takes to return to baseline, or the nadir of the T and U waves? The measurements can be difficult in patients with flat T waves; a broad or notched T wave could represent TU fusion. The duration of the QT interval cannot be measured exactly when the U wave starts before the end of the T wave.

To resolve the above-mentioned problems with QT measurements (and interpretation, of course), I suggest once again the measurement of the so-called QaT interval, i.e. the measurements from the beginning of the Q wave to the apex of the T wave. The QaT interval is more easily and precisely measured than either the QoT or QeT intervals (the measurement from the beginning of the Q wave to the onset of the T wave, or to the end of the T wave, respectively); in addition, by using the QaT interval, the influence of the U wave would be avoided. The QeT interval represents the classically measured QT interval. The QaT interval is the most reproducible measurement in comparison to the other two QT variants [3,4].

In conclusion, I wonder what the results of the study by Covic and colleagues would have been if they had used the QaT interval.

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