

Transthoracic Ventricular Defibrillation in Adults: Effectiveness of Quasi-sinusoidal Biphasic Waveforms.

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Our study evaluates the efficacy of quasi-sinusoidal asymmetrical biphasic waveforms in patients (pts) (n=48) needing defibrillation for ventricular fibrillation (VF). Thirty five pts received shocks for spontaneous primary or secondary VF. The number of episodes of spontaneous VF were 53. Thirteen other pts had induced VF. Diameters of hand-held electrode paddles were 11.5/11.5 cm and 8/8 cm (4 pts). The operator selected an initial shock energy settings of 11-65 Joules (J) (delivered on 50 Ω load). The actual transthoracic impedance (TTI, Ω), delivered energy (DE,J) and peak current (I, A) were measured for each shock. Waveforms of current had second phases = 40-60 % of the first ones. All data are presented as the mean \pm SD. Defibrillation was successful in all pts. Induced VF: I=14.3 \pm 4.0 (7.5 -21) A, DE=45.8 \pm 21.2 (11-77) J, TTI=63.7 \pm 16.6 (40-95) Ω . Spontaneous VF: I=17.7 \pm 7.7 (8-43) A, DE= 66.5 \pm 42 (15-205) J, TTI=65 \pm 21 (22-117) Ω . Only 3 pts with acute myocardial infarction and secondary recurrent VF did not defibrillate by the first high energy shocks in a few episodes VF (140-190 J). It is interesting that in 43 of the 53 (81%) episodes spontaneous VF, defibrillation was succeeded with shocks \leq 95 J. These results demonstrate high efficacy of transthoracic low energy biphasic shocks in defibrillation.

Presenter:

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