Holter method is negative.

1667

LOW FREQUENCY SPECTRAL ANALYSIS OF VENTRICULAR FIBRILLATION.

E.J.F.Carlisle, W.G.Kernohan, J.D.Allen, J.Anderson, A.A.J.Adgey,
Regional Medical Cardiology Centre, Royal Victoria Hospital, Belfast BT12 6BA, Northern Ireland

Is the frequency (f) of ventricular fibrillation (VF) in the patient(pt) the same as in the dog, and does the dominant f of VF depend on its aetiology? In 4 groups of 4 dogs the dominant f of the first 40 secs of VF was measured using a Bruel and Kjaer analyzer (0-100Hz). For spontaneous VF following coronary artery occlusion, the mean dominant f was 12.3±SEM 0.5Hz. In reperfusion VF after coronary artery occlusion for 1 hr, the dominant f was 11.9±0.5 Hz. The f of VF induced electrically after coronary artery occlusion for 1 hr was 11.4±0.4 Hz. The f of glycoside-induced VF was 6.8±1.4 Hz which was significantly lower than that for the first 3 groups ($p < 0.02$). In all 4 groups the f of VF fell significantly over 3 mins ($p < 0.02$). In 8 pts with VF induced by hypothermia during cardiac surgery (mean myocardial temp. 27.4°C), the mean dominant f of the first 40 secs was 4.6±0.3 Hz. The mean dominant f of the first 8 secs of VF did not differ significantly in 13 pts with inferior infarction (6.50±0.2 Hz) from that in 7 pts with anterior infarction (6.5±0.3Hz), nor did it vary significantly with time from the onset of acute ischaemia to VF. In 1 pt, the f of VF fell from 6.0Hz to 3.8 Hz after 90 secs. In 2 pts where VF followed ventricular tachycardia, low fs of VF were recorded (3.75, 4.25 Hz). The electrophysiological mechanisms of a dominant f in VF are not known. Spectral analysis of VF in the dog does not differentiate myocardial ischaemia from reperfusion or electrically induced VF, but may in cardiac glycoside intoxication. The higher dominant f of VF in the dog than in the pt points to possible limitations of this animal model in the study of VF.