

Julian D G, Valentine P A & Miller G G. Disturbances of rate, rhythm and conduction in acute myocardial infarction: a prospective study of 100 consecutive unselected patients with the aid of electrocardiographic monitoring.

Amer. J. Med. 37:915-27, 1964.

[Kanematsu Memorial Institute, Sydney Hospital, Australia]

This paper reported experiences in a prospective study in which electrocardiographic monitoring was employed routinely in a hundred consecutive patients with acute myocardial infarction. The higher incidence of arrhythmias revealed by continuous observation made a reappraisal of their significance and prognosis necessary. [The SCJ[®] indicates that this paper has been cited in over 320 publications since 1964.]

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Our interest in the possibility of treating "sudden death" in myocardial infarction was first stimulated by Beck's experiences in the 1950s.¹ In 1959, a group of us working at the Royal Infirmary, Edinburgh, decided that we would employ open-chest cardiac massage in the context of myocardial infarction if the circumstances were propitious. One day in May in 1960, as I was about to incise the skin for a cardiac catheterisation, one of my associates ran into the laboratory to inform me that a chest physician had just arrested. Being appropriately equipped, I had no alternative but to open the chest and start cardiac massage. Happily, I was shortly joined by surgical colleagues armed with a defibrillator. The patient was restored to sinus rhythm and survived for a further 23 years. Shortly after his recovery, he drew our attention to an article in the *Bulletin of Johns Hopkins Hospital* (he was an alumnus

of John Hopkins) describing the technique of closed-chest cardiopulmonary resuscitation. This was applied, with a success that was only temporary, to another four patients with cardiac arrest complicating myocardial infarction in the succeeding year. We concluded that our failures were due not to the techniques per se but to delays in starting resuscitation and lack of skills in those first on the scene. As a result of our experiences, I wrote an article in *Lancet*, putting forward for the first time the concept of what has subsequently been called the "Coronary Care Unit."²

In order to put these ideas into practice, I went to Australia in 1961 and shortly thereafter instituted continuous monitoring in a special area for all myocardial infarctions entering Sydney Hospital. In 1963, we wrote up this experience, but the paper was rejected by *Lancet* and the *British Medical Journal*, in the latter case because "it was irresponsible to suggest that all patients with myocardial infarction should be routinely monitored." This paper was eventually published in the *Medical Journal of Australia*,³ almost one year later.

Our next paper, the one cited above, also had its vicissitudes, but the several months' delay in its publication on this occasion was not attributable to unfriendly referees but to the temporary disappearance of the corrected proofs behind a filing cabinet in the post office of Sydney Hospital.

This paper has probably been cited frequently because attention was drawn to it by Lown in a celebrated article on Coronary Care Units in the *Journal of the American Medical Association* in 1967.⁴ At that time, he propounded his concept of warning arrhythmias, largely based on his own animal experiments and our human studies. Subsequently, this concept has been seriously questioned, but recently, we have confirmed the importance of the R-on-T phenomenon⁵ as well as our original findings of a very high prevalence of arrhythmias of many kinds in acute myocardial infarction that had not previously been recognised.

1. Beck C S, Weckesser E C & Barry F M. Fatal heart attack and successful defibrillation: new concepts in coronary artery disease. *J. Amer. Med. Assn.* 161:434-6, 1956. (Cited 95 times.)
2. Julian D G. Treatment of cardiac arrest in acute myocardial ischaemia and infarction. *Lancet* 2:840-4, 1961. (Cited 40 times.)
3. Julian D G, Valentine P A & Miller G G. Routine electrocardiographic monitoring in acute myocardial infarction. *Med. J. Aust.* 1:433-6, 1964. (Cited 45 times.)
4. Lown B, Fakhro A M, Hood W B & Thorn G W. The Coronary Care Unit: new perspectives and directions. *J. Amer. Med. Assn.* 199:188-98, 1967. (Cited 445 times.)
5. Campbell R W F, Murray A & Julian D G. Ventricular arrhythmias in first 12 hours of acute myocardial infarction. *Brit. Heart J.* 46:351-7, 1981.