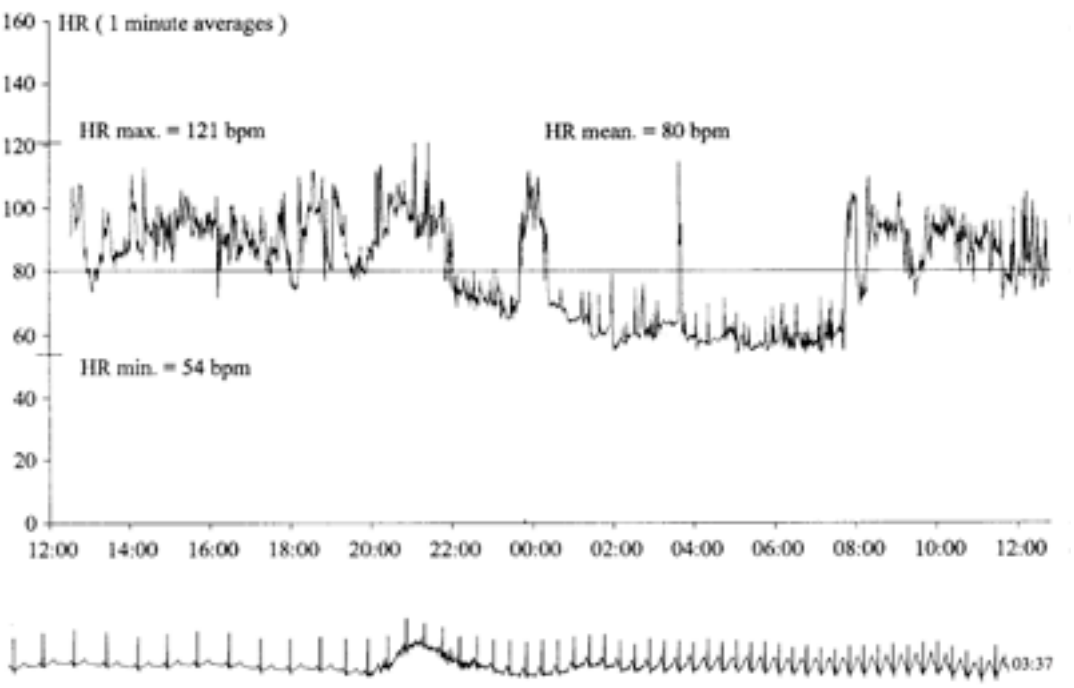
On-call seen as a pathophysiologic state

Figure 1. Results of the 24-hour Holter monitoring including a night on-call



Recently, one of us (AS) underwent 24-hour Holter (ambulatory ECG) monitoring for investigation of minor cardiac symptoms. The recording was performed during a night as medical registrar on-call. We feel the result (figure 1) provides some interesting insights into the pathophysiology of life as a modern junior doctor.

The upper figure is the 24-hour tachogram, which plots heart rate against time of day. At 3:37 am there is an abrupt heart rate surge from 60 to 115 bpm. This coincided with being woken from sleep by a bleep. A 30-second ECG trace of the event is shown in the lower figure. The speed of heart rate acceleration is quite striking and the physiologic slight lag between heart rate acceleration and QT-shortening is visible. The motion artefact induced by turning to pick up the phone can be clearly seen. There are minor heart rate accelerations throughout the night which probably represent periods of REM sleep and testify to the fact that, on the whole, it was not too bad a night on-call.

Incidentally, the heart rate is relatively rapid around midnight, but this did not represent high stress work managing an unwell patient. It was induced by the psychological stress of finding that her on-call room bed had not been made and the subsequent physical activity involved in going back across to the main hospital building to get clean sheets!

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