A Systematic Review of Early Hospital Discharge Following Successful Reperfusion of ST Elevation Myocardial Infarction

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Background: Early reperfusion strategy has led to a reduction in the mortality of ST elevation myocardial infarction (STEMI) patients. The reduction in the length of hospital stay (LOS) in successfully reperfused STEMI patients is due to lower post-infarct complications. However, the optimal LOS in STEMI patients is not clear. We assessed the safety and feasibility of early discharge (ED) among STEMI patients.

Methods: A computer-based search was performed using four major databases. We only included studies utilising either invasive or pharmacological reperfusion strategy. The 30-day outcome of all-cause mortality, rehospitalisation, stroke or reinfarction was analysed.

Results: Six randomised controlled trials (RCTs) and five observational studies were included. The LOS in the ED group varied among studies (24–96 hours). Overall analysis demonstrated a lower 30-day all-cause mortality in the ED group (OR 0.46, 95% CI 0.34–0.62, p = 0.0001), which remained significant when analysing studies with LOS <48 hours. There was no difference in the 30-day rehospitalisation rate (OR 1.19, 95% CI 0.88–1.59, p = 0.26) or re-infarction rate (OR 0.58, 95% CI 0.17–1.97, p = 0.39). The stroke rate was lower in the ED group (OR 0.47, 95% CI 0.28–0.78, p = 0.004). There was a trend towards lower rehospitalisation with radial access and higher rehospitalisation with smoking status of patients.

Conclusion: ED of successfully treated STEMI patients is safe. Low risk patients can be safely discharged within 48 hours of the STEMI reperfusion.

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Acute Coronary Syndromes (ACS) in Western Sydney: 1-year follow-up of ACS patients at Blacktown Hospital

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Background: Ischaemic heart disease (IHD) is a major cause of death in Western society. While improvements in the field of cardiology have reduced high morbidity and mortality rates, ACS is still associated with a significant healthcare burden with regards to hospital re-presentations and chronic cardiac care. The aim of this study was to evaluate the re-presentations of ACS patients to Western Sydney Hospitals and the factors predisposing them.

Methods: ACS patients who underwent angiography between January 2014–2018 at Blacktown Hospital were followed up for 12 months. Re-presentations to local network hospitals along with cardiovascular events were retrospectively evaluated.

Results: A total of 1268 ACS patients were followed up for 12 months post-angiography via hospital records. Of these, 336 patients had at least one cardiac re-presentation and 74 patients had re-infarctions. Excluding miscellaneous reasons, common re-presentations included undifferentiated chest pain (23%), NSTEACS (7%) and heart failure (6%). Sex, ACS type, in-hospital interventions/complications had no impact on re-presentations. However, old age (p < 0.01), history of IHD (p < 0.001) or heart failure (p < 0.005) and diabetes (p < 0.05) were associated with increased cardiac re-presentations. Furthermore, smokers were likely to re-present for all-cause cardiac events (p < 0.05), while patients with hypertension had increased repeat ACS events (p < 0.05).

Conclusion: Hospital re-presentations in the intermediate period following an ACS event is common. Our results suggest that several modifiable risk factors are associated with repeat cardiovascular re-presentations and events. Management of predisposing cardiac risk factors and substrates for accelerated atherosclerosis presents an avenue for a reduction in hospital re-presentations.

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Administration of Geranylgeraniol in a Rodent Model of Statin-Induced Myalgia Prevents Skeletal Muscle Damage Without Adversely Affecting Cardiac Performance

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Several in vitro studies have identified that the administration of geranylgeranyl pyrophosphate (GGPP) can prevent statin-induced damage in skeletal muscle cells. The depletion of GGPP by statins in cardiac tissue, however, is postulated to be important in mediating the pleiotropic benefits of these medications. Accordingly, the aim of this study was to determine whether GGPP supplementation is feasible for the management of statin-associated muscle symptoms (SAMS) in vivo, or if the co-administration of this compound may compromise the cardio-protective effects of statins. Young (12-week old) female Wistar rats were randomised to one of four treatment groups: control, control with geranylgeraniol (GGOH) (the precursor of GGPP), simvastatin (80 mg kg⁻¹) or simvastatin with GGOH. Ex vivo assessment of skeletal muscle force production was conducted in isolated muscles of varying fiber composition. Changes in left ventricular performance and blood vessel functionality were also assessed. Administration of GGOH completely abrogated reduced skeletal muscle performance caused by simvastatin in predominately fast-twitch muscle. GGOH also improved functionality in those muscles not adversely affected by simvastatin.