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CALCITONIN GENE RELATED PEPTIDE IS ELEVATED IN PATIENTS WITH ACUTE CORONARY SYNDROME

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Introduction Elevated blood levels of cardiac troponin (cTn) released during myocardial ischaemia/infarction define acute coronary syndrome (ACS). However, cTn is not detectable for 3–4 h after symptom onset. The peptide Calcitonin Gene Related Peptide (CGRP) is released from nerve endings during myocardial ischaemia and has cardioprotective effects.

Aim To determine if plasma CGRP is elevated in patients with ACS and could be an early marker of myocardial ischaemia.

Methods Blood was drawn from 80 patients with chest pain of possible cardiac origin at various time points from admission to discharge. Elevated cTnT (>0.03 ng/ml) defined patients with ACS. CGRP levels were measured by radioimmunoassay.

Results At 12 h after symptom onset, 46 results were available from 23 individuals without cTn rise (control) and 23 patients with ACS. CGRP was elevated in ACS patients (8.9±0.5 vs 6.8 ±0.5 pg/ml control; p=0.007). CGRP was elevated in both STEMI (9.2±0.9 pg/ml; n=15; p=0.02) and NSTEMI (8.7±0.7 pg/ml; n=34; p=0.03) patients. At first presentation, CGRP levels tended to be higher in ACS (8.4±0.6 pg/ml; n=20) than control (6.9 ±0.5 pg/ml; n=31; p=0.07) subjects. Eight patients with ACS presenting within 8 h of symptoms had normal initial cTn, but significantly elevated CGRP (9.3±0.8 pg/ml) compared with control (p=0.03).

Conclusions CGRP is elevated in patients with cTn positive ACS, both STEMI and NSTEMI. In patients presenting early (within 8 h), in whom cTn had not yet risen, CGRP was significantly elevated compared with control.