

Musculoskeletal chest pain: Diagnosis and manual treatment in patients with acute chest pain admitted to an emergency cardiology department

This is a PhD thesis on the diagnosis and treatment of acute chest pain arising from the musculoskeletal system, named cervico-thoracic angina (CTA). Described patients have been discharged from an emergency cardiology department (ECD) after an episode of suspected, but undocumented acute coronary syndrome (ACS). This thesis comprises a retrospective and a prospective part described in five manuscripts (Papers I-V). The rationale and methodological considerations behind this project were described in Paper I.

The aim of the retrospective part was to evaluate the prevalence of various chest pain diagnoses and clinical characteristics in patients with acute chest pain in an ECD setting (Paper II). The aim of the prospective part was to quantify the frequency of ischemic heart disease and CTA in patients with chest pain and to describe the diagnostic decision-making process when based on case history and clinical examination (Paper III). In addition we aspired to evaluate the reliability of the decision for detection CTA (Paper IV) and the validity of the diagnosis. Finally, we aimed at determining if patients with a CTA positive diagnosis would benefit from chiropractic treatment (Paper V).

In Paper II, we investigated the clinical characteristics of 758 patients with chest pain using medical file data. In Paper III, 305 patients were examined using case history, clinical examination and manual palpation of the spine and thorax. Myocardial perfusion scintigraphy was carried out to evaluate the frequency of ischemic heart disease and to indirectly assess the validity of the CTA diagnosis. In Paper IV, we investigated the inter-observer agreement between four observers diagnosing CTA. The intervention study was conducted as a randomised controlled trial in which 115 patients with diagnosed CTA were allocated to receive either chiropractic care or self-management (Paper V).

Results indicate that a chiropractor using systematic manual palpation of the spine and thorax in combination with the case history could identify a subgroup of 38% of patients with CTA. In this group, we found normal myocardial perfusion in 87% compared to 83% in the CTA negative group. It was possible to establish an examination procedure with low inter-observer variation, but the validity of the procedure could not be established. Finally, the intervention study suggested that patients with CTA might benefit from chiropractic treatment (Paper V).

In summary, the combined work suggests that musculoskeletal dysfunction can be a (contributory) cause of chest pain in patients with acute chest pain, and that manual therapy is a possible treatment for these patients. The clinical consequences of the intervention trial cannot be concluded before we have analysed the long-term results and cost-effectiveness.