PAIN MODULATION PROFILE PRDICTS PATIENT DELAY IN SEEKING MEDICAL HELP IN ACUTE MYOCARDIAL INFARCTION

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Background and Goal of Study

Rapid reperfusion is crucial to reduce mortality in patients with ST-elevation myocardial infarction (STEMI). Prehospital patient delay, defined as time from symptoms onset to the decision to seek medical attention, accounts for a large proportion of cases with delayed reperfusion. However, whether altered pain modulation processes[1] affect less severe pain symptoms and consequently prolonger delay needs further illumination. We explored whether prehospital patient delay is affected by a reduction of perceived pain perception and pain modulation response.

Materials and Methods

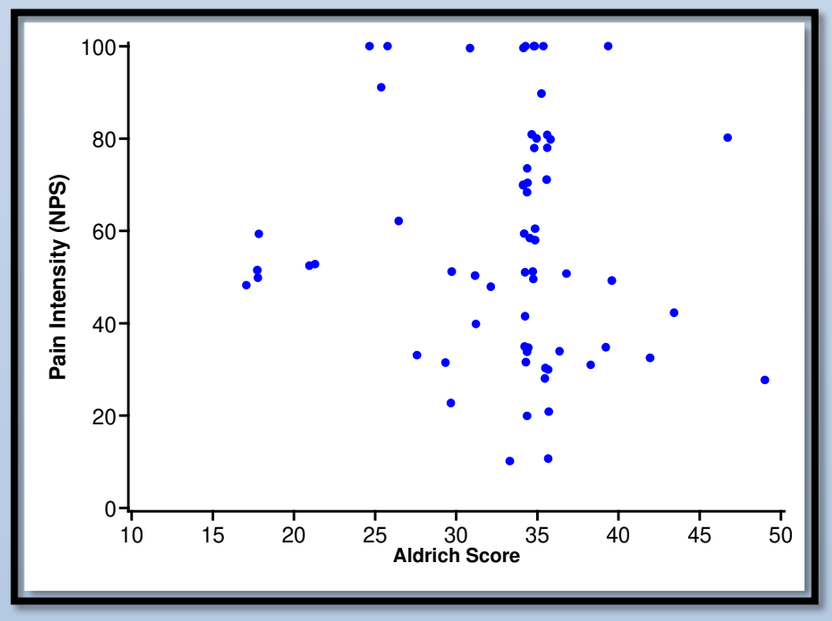
Facilitatory and inhibitory pain modulation pathways assessed by psychophysical tests of temporal summation and conditioned pain modulation (CPM) as well as sensation and pain thresholds, magnitude estimation of supra-threshold stimulation. Pain recalls at the onset of chest pain were obtained in 67 STEMI hospitalized patients. The associations between these measures and chest pain intensity and duration of patient delay were explored.

Results and Discussion

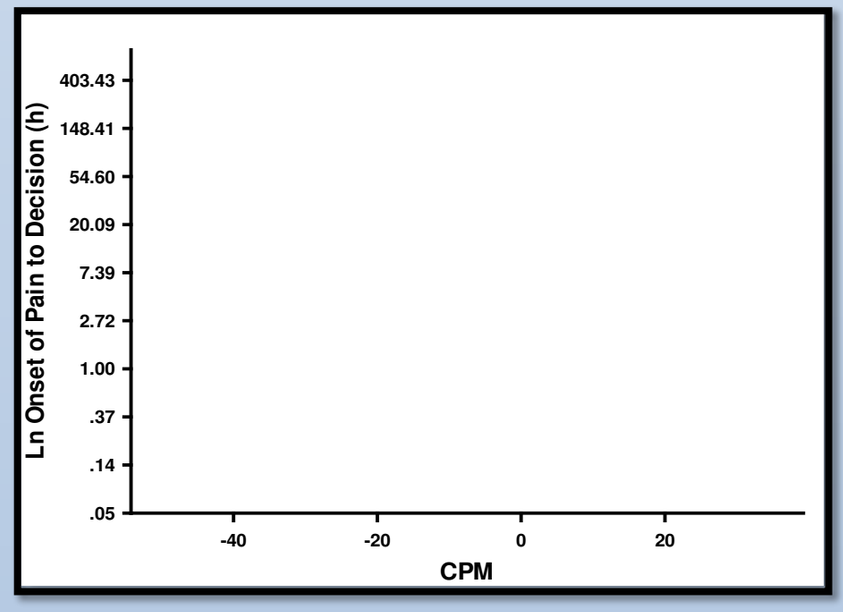
Among all psychophysical pain measures only warm sensation threshold was independently associated with lower clinical chest pain intensity (p = 0.01). Multivariable regression analysis (R^2 = 0.449; P <0.0001) revealed an inverse independent association between chest pain intensity (P<0.001) and patient delay whereas efficient CPM was positively associated with prolonged patient delay (P = 0.034). The electrocardiography-derived myocardial ischemic area at risk for necrosis was not associated with chest pain intensity or patient delay. Beyond the perceived chest pain intensity, patients who exhibit efficient response of the descending inhibition pathways have prolonged delay in seeking medical help after the onset of chest pain during acute coronary occlusion.

Conclusion - The findings emphasize the significant role of the individual pain modulation profile[4] and may suggest new venue to identify patients with susceptibility to experience less pain and less hazard signal and consequently delay in seeking medical help.

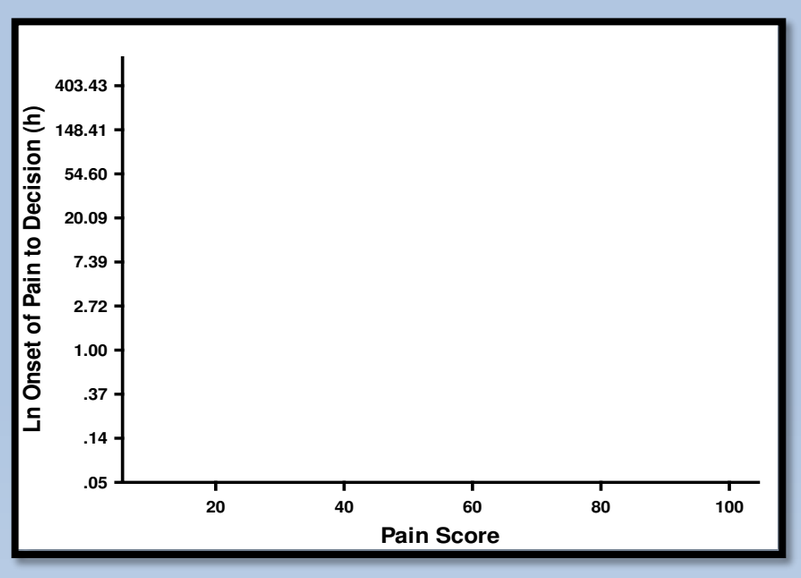
Relationship between chest pain intensity and the electrocardiography derived myocardial area at risk



Greater efficacy of endogenous analgesia (CPM) affects patient delay in seeking medical help



Association between perceived chest pain and duration of patient delay in seeking medical help



Multiple linear regression analysis depicting predictors of patient delay

	Unadjusted			Adjusted		
Variable	B Coefficient (SE)	T	p	B Coefficient (SE)	T	p
Chest pain intensity at onset of symptoms	-(0.01) 0.07	-6.43	0.001>	-(0.01) 0.06	-5.11	0.001>
CPM	-(0.02) 0.05	-2.19	0.033	-(0.02) 0.04	-2.18	0.034
Radiating pain	(0.66) 1.99	3.04	0.003	–	–	–
Mechanical sensation threshold (Ln)	(0.19) 0.47	2.44	0.018	(0.17) 0.33	1.91	0.062

References

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