



1 Causality and Emergency medicine?

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The main goal of emergency medicine is to recognize and treat medical distress and then to dispatch in appropriate place the patient (intensive care, normal care or back to home). The diagnosis and the therapeutic strategies are well known by emergency physicians. However, the etiological strategy is usually considered by them as a further step, considering this could wait further care management, and performed only in the appropriate unit (if the patient is hospitalized). A good illustration of this comment is the significant lower proportion of citations for the term “causality” for Emergency medicine compared to some others medical specialties in PUBMED (Table). However, causality should be included in the diagnosis procedure, as well as severity, in case of a known causal condition may improve the diagnosis (by significantly changing the post-test probability) or the treatment. For instance, in the case of a subject suffering from an acute chest pain, the evaluation of a possible acute coronary syndrome should include search for atherosclerosis and its risk factors. The presence or at the opposite the lack of risk factors modify significantly the probability of acute coronary syndrome (even though not sufficient, of course).(1) Early treatment includes atherosclerosis management as well. There are some other examples, for which risk factors are clearly identified and the diagnosis is not simple (deep venous thrombosis risk factors for the diagnosis of pulmonary embolism, specific allergen exposure and asthma...).(2;3)

Etiological research in early phase of care can improve the diagnosis and the treatment, such as severity assessment. Further studies are needed to assess how causality could improve the diagnosis in emergency care.

44 References

- 45 (1) Swap CJ, Nagurney JT. Value and limitations of chest pain history in the evaluation of
46 patients with suspected acute coronary syndromes. *JAMA* 2005; 294(20):2623-2629.
- 47 (2) Chagnon I, Bounameaux H, Aujesky D, Roy PM, Gourdier AL, Cornuz J et al.
48 Comparison of two clinical prediction rules and implicit assessment among patients with
49 suspected pulmonary embolism. *Am J Med* 2002; 113(4):269-275.
- 50 (3) Sykes A, Johnston SL. Etiology of asthma exacerbations. *J Allergy Clin Immunol* 2008;
51 122(4):685-688.
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55 Table. Proportion of citation in PUBMED including causality in the corresponding medical
 56 specialty in the last 10 years (using Medical Subject Heading Terms).

	Number of citation in the last ten years, for the specialty	Number of citation in the last ten years, for the specialty AND causality	Proportion
Emergency medicine	29571	9377	31,7% *
Cardiology	71575	28773	40,2%
Medical Oncology	42879	17614	41,1%
Neurology	90277	44017	48,8%
Endocrinology	44596	22475	50,4%
Gastroenterology	48305	24959	51,7%
Dermatology	47905	25011	52,2%
Pulmonary medicine	47470	25201	53,1%
Nephrology	31226	17226	55,2%
Rheumatology	23059	12733	55,2%
Hematology	46346	26447	57,1%
TOTAL (emergency medicine excluded)	493638	244456	49,5%

57 (Performed the 11th, April 2009),

58 * p<0.0001, Chi² test between Emergency medicine and other specialties searched.