

Supplementary Appendix

This appendix has been provided by the authors to give readers additional information about their work.

Supplement to: Leung PTM, Macdonald EM, Stanbrook MB, Dhalla IA, Juurlink DN. A 1980 letter on the risk of opioid addiction. *N Engl J Med* 2017;376:2194-5. DOI: 10.1056/NEJMc1700150

A 1980 Letter on the Risk of Opioid Addiction

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ADDICTION RARE IN PATIENTS TREATED WITH NARCOTICS

To the Editor: Recently, we examined our current files to determine the incidence of narcotic addiction in 39,946 hospitalized medical patients¹ who were monitored consecutively. Although there were 11,882 patients who received at least one narcotic preparation, there were only four cases of reasonably well documented addiction in patients who had no history of addiction. The addiction was considered major in only one instance. The drugs implicated were meperidine in two patients,² Percodan in one, and hydromorphone in one. We conclude that despite widespread use of narcotic drugs in hospitals, the development of addiction is rare in medical patients with no history of addiction.

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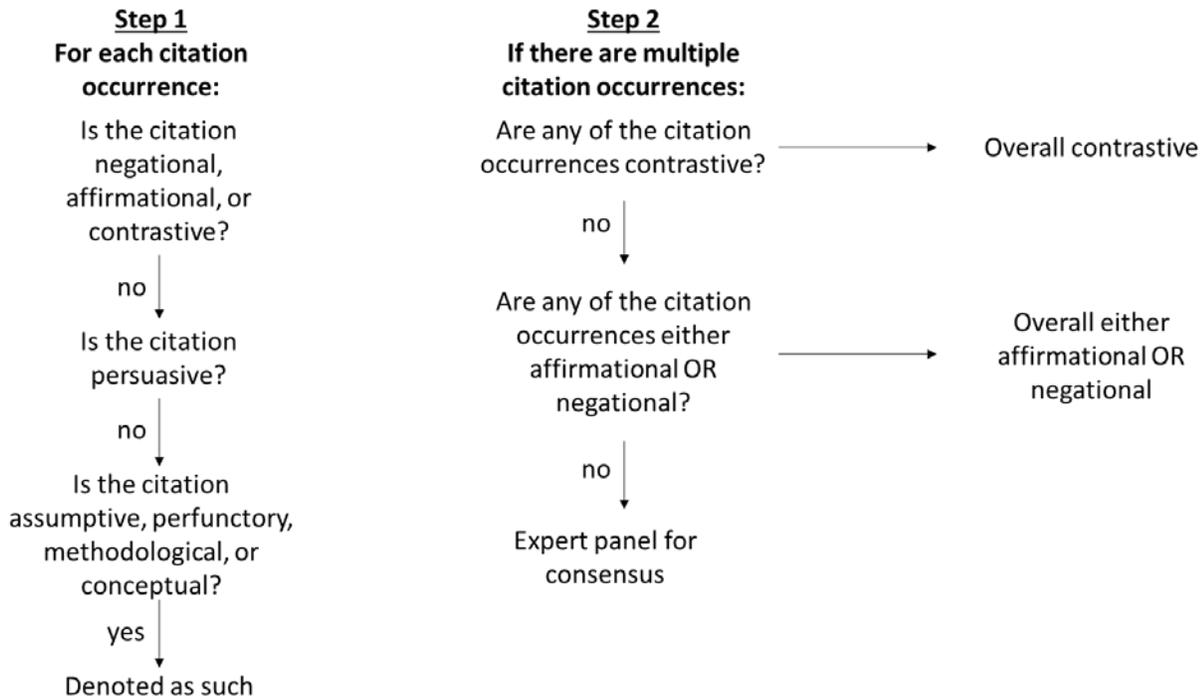
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1. Jick H, Miettinen OS, Shapiro S, Lewis GP, Siskind Y, Slone D. Comprehensive drug surveillance. *JAMA*. 1970; 213:1455-60.
 2. Miller RR, Jick H. Clinical effects of meperidine in hospitalized medical patients. *J Clin Pharmacol*. 1978; 18:180-8.
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Appendix 2a: Definitions for the taxonomic categorization method

Categorization	Definition(s)
Affirmational	Citing work agrees with ideas or findings of cited work Citing work confirms cited work Citing work is supported by cited work Citing work depends on cited work Citing work is strongly influenced by cited work
Negational	Citing work disputes some aspects of cited work Citing work corrects/questions cited work Citing work negatively evaluates cited work
Contrastive	Citing work contrasts between the current work and cited work Citing work contrasts other works with each other Citing work is an alternative to cited work
Persuasive	Cited work is cited in a “ceremonial fashion” Cited work is authored by a recognized authority in the field
Assumptive	Citing work refers to assumed knowledge that is general/specific background Citing work refers to assumed knowledge in an historical account Citing work acknowledges cited work pioneers
Perfunctory	Citing work makes a perfunctory reference to cited work Cited work is cited without additional comment Citing work makes a redundant reference to cited work Cited work is not apparently strictly relevant to the author’s immediate concerns
Methodological	Use of materials, equipment, practical techniques, or tools of cited work Use of analysis methods, procedures, and design of cited work
Conceptual	Use of definitions, concepts, or theories of cited work

Appendix 2b: Taxonomic categorization



Legend

Stepwise taxonomic categorization scheme for articles citing the index publication. In brief, the first step classifies the nature of each citation. In the case of multiple citation occurrences, if any citation occurrences are contrastive, the overall classification is deemed contrastive. Otherwise, if any citation occurrence is either affirmational or negational, the article is deemed as such. If neither of these circumstances applies, a consensus is reached by an expert panel.

Appendix 3: Selected quotes from articles citing Porter and Jick 1980

Quote	Reference	Comment
<p>“This pain population with no abuse history is literally at no risk for addiction.”</p>	<p>Kowal N. What is the issue?: pseudoaddiction or undertreatment of pain. <i>Nurs Econ</i> 1998;17(6):348–9</p>	
<p>“In truth, however, the medical evidence overwhelmingly indicates that properly administered opioid therapy rarely if ever results in "accidental addiction" or "opioid abuse”.</p>	<p>Libby RT. Treating Doctors as Drug Dealers: The Drug Enforcement Administration's War on Prescription Painkillers. <i>The Independent Review</i> 2006;10(4):511-545.</p>	
<p>“Fear of addiction may lead to reluctance by the physician to prescribe. [...] However, there is no evidence that this occurs when prescribing opioids for pain.”</p>	<p>Iles S, Catterall JR, Hanks G. Use of opioid analgesics in a patient with chronic abdominal pain. <i>Int J Clin Pract</i> 2002;56(3):227–8.</p>	
<p>“In reality, medical opioid addiction is very rare. In Porter and Jick's study on patients treated with narcotics, only four of the 11,882 cases showed psychological dependency.”</p>	<p>Liu W, Xie S, Yue L, et al. Investigation and analysis of oncologists' knowledge of morphine usage in cancer pain treatment. <i>Onco Targets Ther</i> 2014;7:729–37.</p>	<p>Overstates conclusions of the index publication does not accurately specify its study population. Limitations to generalizability are not otherwise explicitly mentioned.</p>
<p>“Physicians are frequently concerned about the potential for addiction when prescribing opiates; however, there have been studies suggesting that addiction rarely evolves in the setting of painful conditions.”</p>	<p>Curtis LA, Morrell TD, Todd KH. Pain Management in the Emergency Department 2006;8(7).</p>	
<p>“Although medicine generally regards anecdotal information with disdain (rigorously controlled double-blind clinical trials are the "gold standard"), solid data on the low risk of addiction to opioid analgesics and the manageability of adverse side effects have been ignored or discounted in favor of the anecdotal, the scientifically unsupported, and the clearly fallacious.”</p>	<p>Rich BA. Prioritizing pain management in patient care. Has the time come for a new approach. <i>Postgrad Med</i> 2001;110(3):15–7.</p>	
<p>“The Boston Drug Surveillance Program reviewed the charts of nearly 12,000 cancer pain patients treated over a decade and found only four of them could be labeled as addicts.”</p>	<p>Levy MH. Pharmacologic management of cancer pain. <i>Semin Oncol</i> 1994;21(6):718–39.</p>	<p>Incorrectly identifies the index study population as cancer patients; does not otherwise address limitations to generalizability.</p>