Published in final edited form as:

Pain. 2013 December ; 154(12): 2583–2585. doi:10.1016/j.pain.2013.09.017.

Opioids for Chronic Musculoskeletal Pain: Putting Patient Safety First

Michael Von Korff, ScD¹

¹Group Health Research Institute, Seattle, Washington

In this issue, Azevedo and colleagues [2] report infrequent use of opioids among Portuguese adults with chronic pain, concluding that liberal opioid prescribing for chronic pain is not a ubiquitous phenomenon. From 1980–2010, global consumption of strong opioids increased 30-fold, but with substantial cross-national differences. [25] In 2010, 693 milligrams (morphine equivalents) of strong opioids were prescribed per capita in the United States, compared to 154 milligrams in Portugal, but there is substantial variation in opioid prescribing even within the United States.[36]. On a volume basis, most opioids are prescribed by primary care physicians for long-term management of common chronic pain conditions.[6, 33] Large differences in opioid prescribing practices for chronic pain invite a question: Does more liberal opioid prescribing for long-term chronic pain management yield more or less favorable outcomes?

Opioid effectiveness

As noted by Azevedo et al. [2], Chronic Opioid Therapy (COT) is recommended by many evidence-based guidelines. Guidelines recommend consideration of COT when safer alternatives have not worked or are unsuitable.[1] Because randomized trials of opioids for chronic pain are small and short (typically < 3 months), evidence regarding COT has been graded as low quality.[8] Short-term trials have found that, on average, opioids reduce chronic pain intensity by one-third, with less robust benefits for functional outcomes. Long-term benefits of COT for pain and functional outcomes remain uncertain. Delayed return to work has been found among worker's compensation patients using opioids relative to patients not using opioids, and those receiving higher opioid doses have longer delays in return to work than patients on lower doses.[13, 14, 20, 32, 35] There is evidence that patients with chronic pain receiving rehabilitative services who are withdrawn from opioids have improved outcomes.[4, 7, 10, 16, 18, 26, 29, 30] Given deficient scientific evidence, and large differences in analgesic response between patients, it is difficult to make categorical statements about the long-term effectiveness of COT for patients with chronic musculoskeletal pain, particularly when improved function is a primary goal.

Corresponding Author: Michael Von Korff, ScD, Group Health Research Institute, Seattle, WA, Phone: (206) 287-2874, Fax: (206) 287-2871, vonkorff.m@ghc.org.

Commentary on: A population-based study on chronic pain and opioids utilization in Portugal

Opioid safety

A premise underlying more liberal opioid prescribing for chronic pain was that risks of addiction were low among carefully selected patients. Initial studies supported this premise [11, 23] However, more recent studies directly assessing COT patients in community practice have found opioid addiction among 4% to 26% of these patients, with even higher rates of serious opioid misuse.[5, 12, 15] As opioid prescribing increased in the U.S., prescription opioid abuse and overdose epidemics ensued. From 1999–2009, drug abuse treatment admissions for prescription opioids grew six-fold, to 140,000 a year, with more than three-quarters of a million opioid addiction treatment admissions in that time-span.[28] Fatal overdoses involving opioid analgesics increased four-fold, to over 16,500 a year, with more than 125,000 overdose deaths from 1999–2010.[34] Estimates vary, but the most rigorous study found that 87% of those who died of a drug overdose involving prescription opioids obtained opioids by prescription in the prior year.[19] If this result is generalizable, overdose deaths involving medically prescribed opioids are common, although polypharmacy and drug abuse are often contributing factors. In 2011, the U.S. federal government concluded, “Prescription drug misuse and abuse is a major public health and public safety crisis. As a nation, we must take urgent action to ensure the appropriate balance between the benefits of these medications and the risks they pose.”[24]

Implications of chronic pain prevalence for patient safety

Azevedo et al. [2] found that 37% of Portuguese adults had a chronic pain condition, a rate similar to other developed and developing countries world-wide, [31] while 11% of Portuguese adults had moderate to severe disability related to chronic pain. These estimates are consistent with survey data from diverse countries finding that: 35 to 55% of adults have chronic pain; one-quarter of all adults have moderate to severe chronic pain; and about 12% of adults suffer from severe disabling chronic pain.[9] Applying these rates to the U.S. adult population: 80 to 130 million adults have chronic pain; 60 million have moderate to severe chronic pain; and 30 million have severe disabling chronic pain. About 2–3% of U.S. adults currently use opioids long-term for chronic pain on a daily basis--about 5 to 7 million persons.[6, 17] Since millions of patients with chronic pain are now receiving COT in community practice, and the number with clinically significant chronic pain who may consider using opioids long-term is far larger, it is critically important whether recommended precautions are implemented in community practice, and whether they are effective in reducing risks. Unfortunately, guideline-recommended universal precautions for COT are usually not implemented in community practice [21, 22, 27] and their effectiveness in protecting patient safety even if implemented fully is unknown.

Putting patient safety first

There are substantial uncertainties about COT effectiveness for helping patients with chronic pain over the long-run. Risks and harms are greater than initially believed. We don't know if recommended precautions work, and they are not being routinely implemented in community practice. While we await better evidence regarding COT effectiveness, practical strategies for protecting patient safety should be implemented on a trial basis and effects on

patient outcomes evaluated by clinicians and by researchers. Possible approaches to reducing opioid-related risks were recently proposed in a collaborative meeting of primary care physicians and pain specialists with relevant expertise.[3]

Relative to Portugal, the United States pursued a more liberal policy of prescribing COT for chronic musculoskeletal pain. It has not been established that the substantial societal and personal costs of chronic musculoskeletal pain have been reduced through more liberal opioid prescribing, whereas an epidemic of prescription opioid addiction and overdose has ensued. Until evidence is developed establishing benefits of opioids for long-term management of chronic musculoskeletal pain, and practical strategies for reducing risks have been demonstrated, a circumspect approach towards long-term use of opioids for chronic musculoskeletal pain is warranted. Avezedo et al's results [2] suggest that a cross-national study comparing pain and functional outcomes, and relevant adverse events, in patients with chronic pain who are exposed to distinctly different opioid prescribing practices could shed light on the comparative effectiveness and safety of chronic opioid therapy.

Acknowledgments

Dr. Von Korff's research on chronic opioid therapy is supported by a grant from the National Institute of Aging 1R01 AG034181. Dr. Von Korff is principal investigator of research grants to Group Health Research Institute funded by Pfizer Inc. and Johnson and Johnson Inc.

References

1. American Geriatrics Society Panel on Pharmacological Management of Persistent Pain in Older Persons. Pharmacological management of persistent pain in older persons. *J Am Geriatr Soc.* 2009; 57(8):1331–46. [PubMed: 19573219]
2. Azevedo LF, Costa-Pereira A, Mendonca L, Dias CC, Castro-Lopes JM. A population-based study on chronic pain and opioid utilization in Portugal. *Pain.* In Press.
3. Ballantyne, J.; Beck, R.; Bertagnolli, A.; Boudreaux, M.; Burdge, H.; Catlin, M.; Chou, R.; Franklin, G.; Klaff, R.; Kolodny, A.; Krebs, E.; Mariano, T.; Nelson, D.; Rosenblatt, R.; Scull, G.; Seelig, M.; Stephens, M.; Sullivan, M.; Tauben, D.; Trescott, C.; Von Korff, M. Principles for more selective and cautious opioid prescribing. Seattle, WA: Group Health Research Institute; 2011. [cited 2013 September 5]; Available from: <http://www.grouphealthresearch.org/resources/Principles-for-More-Selective-and-Cautious-Opioid-Prescribing.pdf>
4. Baron MJ, McDonald PW. Significant pain reduction in chronic pain patients after detoxification from high-dose opioids. *J Opioid Manag.* 2006; 2(5):277–82. [PubMed: 17319259]
5. Boscarino JA, Rukstalis M, Hoffman SN, Han JJ, Erlich PM, Gerhard GS, Stewart WF. Risk factors for drug dependence among out-patients on opioid therapy in a large US health-care system. *Addiction.* 2010; 105(10):1776–82. [PubMed: 20712819]
6. Boudreau D, Von Korff M, Rutter CM, Saunders K, Ray GT, Sullivan MD, Campbell CI, Merrill JO, Silverberg MJ, Banta-Green C, Weisner C. Trends in long-term opioid therapy for chronic non-cancer pain. *Pharmacoepidemiol Drug Saf.* 2009; 18(12):1166–75. [PubMed: 19718704]
7. Brodner RA, Taub A. Chronic pain exacerbated by long-term narcotic use in patients with nonmalignant disease: clinical syndrome and treatment. *Mt Sinai J Med.* 1978; 45(2):233–7. [PubMed: 26869]
8. Chou R, Fanciullo GJ, Fine PG, Adler JA, Ballantyne JC, Davies P, Donovan MI, Fishbain DA, Foley KM, Fudin J, Gilson AM, Kelter A, Mauskop A, O'Connor PG, Passik SD, Pasternak GW, Portenoy RK, Rich BA, Roberts RG, Todd KH, Miaskowski C. American Pain Society-American Academy of Pain Medicine Opioids Guidelines Panel. Clinical guidelines for the use of chronic opioid therapy in chronic noncancer pain. *J Pain.* 2009; 10(2):113–30. [PubMed: 19187889]

9. Croft, P.; Blyth, F.; van der Windt, D. The global occurrence of chronic pain: an introduction. In: Croft, P.; Bythe, F.; van der Windt, D., editors. *Chronic Pain Epidemiology: From Aetiology to Public Health*. Oxford, England: Oxford University Press; 2010. p. 9-18.
10. Finlayson RE, Maruta T, Morse RM, Martin MA. Substance dependence and chronic pain: experience with treatment and follow-up results. *Pain*. 1986; 26(2):175–80. [PubMed: 3763231]
11. Fishbain DA, Cole B, Lewis J, Rosomoff HL, Rosomoff RS. What percentage of chronic nonmalignant pain patients exposed to chronic opioid analgesic therapy develop abuse/addiction and/or aberrant drug-related behaviors? A structured evidence-based review. *Pain Med*. 2008; 9(4):444–59. [PubMed: 18489635]
12. Fleming MF, Balousek SL, Klessig CL, Mundt MP, Brown DD. Substance use disorders in a primary care sample receiving daily opioid therapy. *J Pain*. 2007; 8(7):573–82. [PubMed: 17499555]
13. Franklin GM, Rahman EA, Turner JA, Daniell WE, Fulton-Kehoe D. Opioid use for chronic low back pain: A prospective, population-based study among injured workers in Washington state, 2002–2005. *Clin J Pain*. 2009; 25(9):743–51. [PubMed: 19851153]
14. Gross DP, Stephens B, Bhambhani Y, Haykowsky M, Bostick GP, Rashid S. Opioid prescriptions in canadian workers' compensation claimants: prescription trends and associations between early prescription and future recovery. *Spine (Phila Pa 1976)*. 2009; 34(5):525–31. [PubMed: 19247173]
15. Hojsted J, Nielsen PR, Guldstrand SK, Frich L, Sjogren P. Classification and identification of opioid addiction in chronic pain patients. *Eur J Pain*. 2010; 14(10):1014–20. [PubMed: 20494598]
16. Hooten WM, Townsend CO, Sletten CD, Bruce BK, Rome JD. Treatment outcomes after multidisciplinary pain rehabilitation with analgesic medication withdrawal for patients with fibromyalgia. *Pain Med*. 2007; 8(1):8–16. [PubMed: 17244099]
17. Hudson TJ, Edlund MJ, Steffick DE, Tripathi SP, Sullivan MD. Epidemiology of regular prescribed opioid use: results from a national, population-based survey. *J Pain Symptom Manage*. 2008; 36(3):280–8. [PubMed: 18619768]
18. Jensen MP, Turner JA, Romano JM. Changes in beliefs, catastrophizing, and coping are associated with improvement in multidisciplinary pain treatment. *J Consult Clin Psychol*. 2001; 69(4):655–62. [PubMed: 11550731]
19. Johnson EM, Lanier WA, Merrill RM, Crook J, Porucznik CA, Rolfs RT, Sauer B. Unintentional prescription opioid-related overdose deaths: description of decedents by next of kin or best contact, Utah, 2008–2009. *J Gen Intern Med*. 2013; 28(4):522–9. [PubMed: 23070654]
20. Kidner CL, Mayer TG, Gatchel RJ. Higher opioid doses predict poorer functional outcome in patients with chronic disabling occupational musculoskeletal disorders. *J Bone Joint Surg Am*. 2009; 91(4):919–27. [PubMed: 19339577]
21. Krebs EE, Ramsey DC, Milosheff JM, Bair MJ. Primary care monitoring of long-term opioid therapy among veterans with chronic pain. *Pain Med*. 2011; 12(5):740–6. [PubMed: 21481167]
22. Morasco BJ, Duckart JP, Dobscha SK. Adherence to clinical guidelines for opioid therapy for chronic pain in patients with substance use disorder. *J Gen Intern Med*. 2011; 26(9):965–71. [PubMed: 21562923]
23. Noble M, Treadwell JR, Tregear SJ, Coates VH, Wiffen PJ, Akafofomo C, Schoelles KM. Long-term opioid management for chronic noncancer pain. *Cochrane Database Syst Rev*. 2010; (1):CD006605. [PubMed: 20091598]
24. Office of National Drug Control Policy. Epidemic: Responding to America's Prescription Drug Abuse Crisis. 2011 Apr 11. [cited 2011 Jun 10]; Available from: http://www.whitehousedrugpolicy.gov/publications/pdf/rx_abuse_plan.pdf
25. University of Wisconsin-Madison; Pain and Policy Studies Group. Improving global pain relief by achieving balanced access to opioids worldwide. [cited 2013 Sept 3]; Available from: <http://www.painpolicy.wisc.edu/opioid-consumption-data>
26. Ralphs JA, Williams AC, Richardson PH, Pither CE, Nicholas MK. Opiate reduction in chronic pain patients: a comparison of patient-controlled reduction and staff controlled cocktail methods. *Pain*. 1994; 56(3):279–88. [PubMed: 8022621]

27. Starrels JL, Becker WC, Weiner MG, Li X, Heo M, Turner BJ. Low use of opioid risk reduction strategies in primary care even for high risk patients with chronic pain. *J Gen Intern Med.* 2011; 26(9):958–64. [PubMed: 21347877]
28. Substance Abuse and Mental Health Services Administration (SAMHSA). Treatment Episode Dataset (TEDS) 1999–2009. National Admissions to Substance Abuse Treatment Services; Table 1.1a. [cited 2012 Jan 23]; Available from: <http://www.samhsa.gov/data/DASIS/teds09/TEDS2k9NTb1.1a.htm>
29. Taylor CB, Zlutnick SI, Corley MJ, Flora J. The effects of detoxification, relaxation, and brief supportive therapy on chronic pain. *Pain.* 1980; 8(3):319–29. [PubMed: 6105638]
30. Townsend CO, Kerkvliet JL, Bruce BK, Rome JD, Hooten WM, Luedtke CA, Hodgson JE. A longitudinal study of the efficacy of a comprehensive pain rehabilitation program with opioid withdrawal: comparison of treatment outcomes based on opioid use status at admission. *Pain.* 2008; 140(1):177–89. [PubMed: 18804915]
31. Tsang A, Von Korff M, Lee S, Alonso J, Karam E, Angermeyer MC, Borges GL, Bromet EJ, Demyttenaere K, de Girolamo G, de Graaf R, Gureje O, Lepine JP, Haro JM, Levinson D, Oakley Browne MA, Posada-Villa J, Seedat S, Watanabe M. Common chronic pain conditions in developed and developing countries: gender and age differences and comorbidity with depression-anxiety disorders. *J Pain.* 2008; 9(10):883–91. [PubMed: 18602869]
32. Volinn E, Fargo JD, Fine PG. Opioid therapy for nonspecific low back pain and the outcome of chronic work loss. *Pain.* 2009; 142(3):194–201. [PubMed: 19181448]
33. Von Korff M, Kolodny A, Deyo RA, Chou R. Long-term opioid therapy reconsidered. *Ann Intern Med.* 2011; 155(5):325–8. [PubMed: 21893626]
34. Warner, M.; Chen, L.; Makuc, D. Increase in Fatal Poisonings Involving Opioid Analgesics in the United States, 1999–2006. NCHS data brief number 22. 2009. [cited 2010 Mar 10]; Available from: <http://www.cdc.gov/nchs/data/databriefs/db22.htm>
35. Webster BS, Verma SK, Gatchel RJ. Relationship between early opioid prescribing for acute occupational low back pain and disability duration, medical costs, subsequent surgery and late opioid use. *Spine (Phila Pa 1976).* 2007; 32(19):2127–32. [PubMed: 17762815]
36. Zerzan JT, Morden NE, Soumerai S, Ross-Degnan D, Roughead E, Zhang F, Simoni-Wastila L, Sullivan SD. Trends and geographic variation of opiate medication use in state Medicaid fee-for-service programs, 1996 to 2002. *Med Care.* 2006; 44(11):1005–10. [PubMed: 17063132]