taking more than 7 tablets of regular strength (325 mg) acetaminophen per week should be monitored closely for any rise in INR levels. Patients taking warfarin who experience a sudden jump in their INR levels should be queried regarding recent acetaminophen use. Steady intake of foods containing vitamin K and moderate alcohol consumption (up to 2 drinks per day) may protect patients from INR elevations.

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Warming Bupivacaine for Intradermal Anesthesia

Jones JS, Plzak C, Wynn BN, Martin S. Effect of temperature and pH adjustment of bupivacaine for intradermal anesthesia. Am J Emerg Med 1998;16:117-120.

Clinical question What effect does the warming and buffering of bupivacaine (Marcaine) have on the pain associated with intradermal injection and the onset of anesthesia?

Background Despite bupivacaine's long duration of action, other local anesthetics are more often used for intradermal anesthesia because of bupivacaine's tendency to cause burning with injection and to have a prolonged onset of anesthesia. Buffering the bupivacaine has been shown to decrease the pain of infiltration. Whether warming bupivacaine to body temperature can reduce injection-associated pain and the duration of onset of anesthesia is unknown.

Population studied The population studied included 40 healthy adult volunteers from the medical and nursing staff at Butterworth Hospital in Grand Rapids, Michigan. There were no reported dropouts and no biographical data were given.

Study design and validity This 3-part randomized, double-blind study compared bilateral forearm injection of room temperature 0.5% bupivacaine buffered to a pH of 7.1 with 8.4% sodium bicarbonate with each of the following three solutions: buffered bupivacaine warmed to 37°C; unbuffered bupivacaine at 37°C; and unbuffered bupivacaine at room temperature. Comparison injections occurred over a 1-month time period. Volunteers rated their pain at the site of injection on a scale of 0 to 100. Participants were given guidelines for the pain scale to create some consistency in rating. Duration of onset of anesthesia in a 1-cm diameter was timed with a stopwatch. The methods for warming and buffering the solution were carefully defined.

Outcomes measured Mean injection pain scores and the duration of onset of anesthesia were compared between buffered room temperature bupivacaine and the other three solutions.

Results Warming buffered bupivacaine significantly reduced the pain of injection by a mean score of 12.1 mm (95% CI, 6.9 - 16.4). Warming also reduced the time of onset of anesthesia by 12.1 seconds from a mean latency time of 83.7 seconds to 71.6 seconds ($P = 0.03$; 95% CI, 0.6 - 23.6). Buffering room temperature bupivacaine reduced the mean pain score compared with an unbuffered solution by 12.8 mm (95% CI, 7.7 - 17.0). Buffering did not, however, affect the duration of onset of anesthesia (95% CI, -13.4 to 10.4 sec). Warming had more of an effect on pain than buffering, but both appeared to have a cumulative effect.

Recommendations for clinical practice **Warming and buffering bupivacaine decreases the pain of injection on intact nontraumatized skin. Although it is feasible to buffer bupivacaine in most clinical settings, it may be difficult to warm the solution as was done in this study. Warming bupivacaine reduced the time of onset of anesthesia statistically, but this difference is unlikely to be clinically significant. Before adopting the practice of warming bupivacaine, which may be more technically challenging than buffering, further studies should be performed on traumatized tissue to see if the results are consistent. A recent study has shown that slower rates of lidocaine infusion can reduce the pain of injection.[1] Thus, paying attention to the speed of injection of bupivicaine may also be important.**

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Lack of Efficacy of Cisapride and Nizatidine in Dyspepsia

Hansen JM, Bytzer P, Schaffalitzky de Muckadell OB. Placebo-controlled trial of cisapride and nizatidine in unselected patients with functional dyspepsia. Am J Gastroenterol 1998; 93:368-74.

Clinical question **Are cisapride or nizatidine useful for the treatment of nonulcer dyspepsia in primary care patients?**

Background While many physicians empirically treat nonulcer dyspepsia with an H_2-antagonist, several small trials have not shown these agents to be effective. Others believe that nonulcer dyspepsia is a motility dis-