BACKGROUND: Concerns of increased cardiovascular (CV) thromboembolic adverse effects from nonsteroidal antiinflammatory drugs (NSAIDs, both nonselective [NS]-NSAIDs and cyclooxygenase [COX]-2 selective inhibitors) have prevented their use despite numerous benefits. METHODS: In this descriptive review, we critically examine the randomized, active- and placebo-controlled studies, observational trials, and meta-analyses evaluating the CV adverse effects associated with long-term and short-term use of COX-2 selective inhibitors and NS-NSAIDs. The potential mechanisms for these CV effects are also presented. RESULTS: Although the studies evaluating the CV risks have limitations, there appears to be an increased CV risk with both COX-2 selective inhibitors and NS-NSAIDs, particularly in high-risk patients. Therefore, the United States Food and Drug Administration has given a similar “boxed” warning highlighting the potential for increased risk of CV events associated with their use. Nevertheless, there are differences in the CV risks between COX-2 selective inhibitors (e.g., higher CV risk with rofecoxib than celecoxib) as well as differences in the CV risks between individual NS-NSAIDs (e.g., higher CV risks with diclofenac than naproxen). CONCLUSIONS: Until long-term, prospective, randomized, adequately powered, clinical studies in relevant
patient populations have been completed, the CV risks associated with the use of NSAIDs, especially in high-risk patients, will likely continue to be controversial. Nevertheless, the benefits of their short-term (e.g., perioperative) use in patients without CV risks probably outweigh their potential CV adverse effects. Finally, careful risk/benefit assessment should be undertaken and both COX-2 selective inhibitors and NS-NSAIDs should be used with caution in patients with CV risk factors.