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Letters to the Editors

Letter to the Editor on "Low-Dose Aspirin is Adequate for Venous Thromboembolism Prevention Following Total Joint Arthroplasty: A Systemic Review"

This letter is in reference to the article by Azboy et al titled "Low-Dose Aspirin is Adequate for Venous thromboembolism Prevention Following Total Joint Arthroplasty: A Systemic Review." I have been an advocate for Aspirin since my publications in the early 1980s. It is important to credit Eduardo Salvati and Paul Lotke as early supporters for aspirin (and perhaps to credit them for the vilification they endured during the 1990s from advocates of warfarin and LMWH). I believe it is important that the data now support the use of 81 mg doses. I used 325 mg twice a day because more platelets are formed during the day. (Reference #40, 54) I thought it was interesting that treatment for < one month had more mortality, and do believe that supports the additional benefit of arterial clot prevention. I write to ask two questions of the authors: first, one benefit of aspirin has been avoidance of heterotopic ossification. I did not have one case of grade 3 or 4 HTO using aspirin with the dosage listed in 40 years and so avoided a disabling complication of THA. Does 81 mg provide the same protection against HTO? The second question is the quality of pain relief. With 325 mg twice a day, we had many patients who tolerated their pain with the aspirin and an anti-inflammatory twice a day augmented by continual ice for 1-2 weeks. That allowed them to be off "pain meds/opiates" quickly after surgery. If your data on 81 mg also provides these two benefits, I would support it for all patients. If not, I would make a judgment decision for the better choice for individual patients.

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Reply to Letter to Editor: Low-Dose Aspirin is Adequate for Venous Thromboembolism Prevention Following Total Joint Arthroplasty: A Systematic Review

To the Editor,

We thank Dr Dorr for his interest in our article and for pointing out some important questions. We would like to thank Dr. Dorr and other investigators for the sentinel studies that supported the use of aspirin for VTE prophylaxis. The efforts by leaders such as Dr Dorr, Dr Salvati and Dr Lotke have led to wide adoption of aspirin as the safest and efficacious VTE prophylaxis for patients undergoing joint arthroplasty.

As you know, the literature supports the use of aspirin for prevention of heterotopic ossification [1–3]. The effect of aspirin on prevention of heterotopic ossification (HO) is by inhibition of the cyclo-oxygenase enzyme and by impairing the transformation of arachidonic acid into prostaglandins and thromboxanes synthesis. However, the optimal dose of aspirin as HO prophy-

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One of the authors certifies that he (JP) has received or may receive personal fees during the study period, an amount of USD 100,001 to USD. 1,000,000 from Corentec (Morristown, NJ); less than USD 10,000 from MicroGen DX (Orlando, FL); less than USD 10,000 from DataTrace (Towson, MD); less than USD 10,000 from Elsevier (Philadelphia, PA); less than USD 10,000 from Jaypee Publishers (London, UK); less than USD 10,000 from Slack Incorporated (Thorofare, NJ); and less than USD 10,000 from Wolters Kluwer (Alphen aan den Rijn, the Netherlands). One of the authors certifies that he (JP) has stock ownership in Parvizi Surgical Innovations (Philadelphia, PA); Hip Innovation Technology (Boca Raton, FL); Cross Current Business Intelligence (Newtown, PA); Alphaeon (Irvine, CA); Joint Purification Systems (Solana Beach, CA); Ceribell (Mountain View, CA); MedAp, Physician Recommended Nutriceuticals (Blue Bell, PA); PRN Veterinary (Blue Bell, PA); MDValuate (Centennial, CO); Intellijoint (Waterloo, Ontario, Canada); and MicroGenDx (Orlando, FL). One of the authors certifies that he (JP) he is a consultant to Zimmer Biomet (Warsaw, IN), ConvaTec (Deeside, UK), CeramTec (Plochingen, Germany), Corentec (Morristown, NJ), Ethicon (Somerville, NJ), and Tenor (San Francisco, CA).

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laxis is not clear. High-dose aspirin, namely 325 mg twice daily, for 2 to 6 weeks has been shown to be effective in reducing HO following THA [1–3]. Other doses of aspirin as HO prophylaxis has not been explored as much. To the best of our knowledge, there is only one study reporting efficacy of low-dose aspirin as HO prophylaxis. A randomized controlled, double-blind trial of 2649 patients receiving low-dose aspirin (162 mg daily) for 35 days or matching placebo found no significant benefit of low-dose aspirin in the prevention of heterotopic bone formation [4]. It is not known whether the lack of effect was related to the dose of aspirin or the design of the study. We recently evaluated our patient population and evaluated the incidence of HO in patients receiving low-dose versus high-dose aspirin and did not see any difference in the rate and intensity of HO between the two doses of aspirin.

Your other question regarding the analgesic effect of aspirin is also interesting. Numerous studies have reported on the anti-inflammatory and analgesic effect of aspirin that also decreased the use of opioids [5,6]. However, to the best of our knowledge, there is no study available in the literature comparing low-dose versus high-dose aspirin in pain management protocols after total joint arthroplasty. This should be a subject of future studies.

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References

[1] Bek D, Beksaç B, Della Valle AG, Sculco TP, Salvati EA. Aspirin decreases the prevalence and severity of heterotopic ossification after 1-stage bilateral total hip arthroplasty for osteoarthrosis. J Arthroplasty 2009;24:226–32.
[2] Nunley RM, Zhu J, Clohisy JC, Barrack RL. Aspirin decreases heterotopic ossification after hip resurfacing. Clin Orthop Relat Res 2011;469:1614–20.
[3] White PB, Ramkumar PN, Meftah M, Ghazi N, Ranawat AS, Ranawat CS. Incidence of heterotopic ossification following a multimodal pain protocol in total hip arthroplasty with the posterior approach. Orthopedics 2018;1:e92–7.
[4] Neal BC, Rodgers A, Gray H, Clark T, Beaumont DD, House T, et al. No effect of low-dose aspirin for the prevention of heterotopic bone formation after total hip replacement: a randomized trial of 2,649 patients. Acta Orthop Scand 2000;71:129–34.
[5] Dorr LD, Raya J, Long WT, Boutary M, Sirianni LE. Multimodal analgesia without parenteral narcotics for total knee arthroplasty. J Arthroplasty 2008;23:502–8.
[6] Maheshwari AV, Blum YC, Shekhar L, Ranawat AS, Ranawat CS. Multimodal pain management after total hip and knee arthroplasty at the Ranawat Orthopaedic Center. Clin Orthop Relat Res 2009;467:1418–23.

Letter to the Editor on "Synovial Fluid Calprotectin for the Preoperative Diagnosis of Chronic Periprosthetic Joint Infection"

To the Editor:

We read with great interest the article by Salari et al. [1], titled "Synovial Fluid Calprotectin for the Preoperative Diagnosis of Chronic Periprosthetic Joint Infection," published in February 2020 issue, regarding the role of synovial fluid calprotectin in the diagnosis of knee periprosthetic joint infections (PJIs).

The search for biomarkers that could be helpful in the diagnosis and management of PJIs is gaining increasing importance in recent years, therefore several studies have recently focused on this topic, thus we applaud the Authors for their research aiming to investigate the role of synovial calprotectin in the preoperative diagnosis of PJI. Based on the findings reported by Salari et al [1], calprotectin, together with other emerging biomarkers (ie, presepsin, Toll-like receptor 2, soluble urokinase-type plasminogen activator receptor, chemokine ligand 2, and osteopontin), could become a useful tool in the diagnosis of PJI [2–4].

So far, we have focused our researches and clinical practice [5] on the presepsin, that is, the soluble cluster of differentiation 14 subtype, that in a recent preliminary prospective study has revealed more accurate than C-reactive protein (CRP) in the assessment of postoperative inflammation, in patients undergoing primary total hip replacement or primary total knee replacement [3]. In a prospective multicenter study on 100 patients undergoing total joint replacement for PJI or aseptic loosening, presepsin levels in PJI resulted higher than in aseptic loosening [4]. Moreover, presepsin showed a linear correlation with CRP and interleukin 6 levels [4].

We believe that, in a recent future, these emerging biomarkers could improve the diagnosis and the treatment of PJI, therefore studies aiming at better defining the usefulness of these biomarkers should be strongly encouraged.

However, a couple of questions arise from this article.

First, it appears clear that the calprotectin test is considered suggestive for PJI when >50 mg/L, as previously stated by Wouthuyzen-Bakker et al [6], but the latter Authors assume that synovial calprotectin may be a valuable biomarker especially in an infection exclusion, while the present study suggests synovial calprotectin immunoassay test has a high sensitivity and specificity in the diagnosis of knee infection. Consequently, should we routinely assess synovial fluid calprotectin in clinical practice, being this test cheap and easy to use? And should it be performed to diagnose or to exclude a PJI?

Second, since the synovial calprotectin test showed a sensitivity of 100% and a specificity of 95%, should we change our behavior in clinical practice, abandoning the study of perioperative CRP and/or intraoperative alfa-defensin test and focusing our attention on calprotectin and/or presepsin?

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