

## HO prevention and the combined therapeutic protocol—do we really need it?

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We would like to comment on the article by E.E. Pakos et al. entitled "Prevention of heterotopic ossification in high-risk patients with total hip arthroplasty: the experience of a combined therapeutic protocol" [5]. First, we would like to congratulate the authors for their contribution to the relevant literature. In the authors' study, ankylosing spondylitis, hypertrophic osteoarthritis, diffuse skeletal hyperostosis, biochemical factors, male sex and a previous history of heterotopic ossification are defined as risk factors [5]. They also stated that this kind of study (combined radiotherapy and NSAID) has not been done before. They could not find a difference regarding the types of prosthesis, but found a statistically significant incidence of HO in females and in patients of osteoarthritis secondary to congenital hip dysplasia [5]. Heterotopic ossification (HO) is a common problem, especially after total hip replacement (THR) or after fracture treatment around the hip.

With a brief literature review, we found studies taking an opposing view to this study in which additional medication to radiotherapy caused no improvement of the clinical outcome [1]. Combined treatments were used post acetabular fractures and were found to be effective [4]. The authors stated that male sex is a risk factor, but have found HO to be increased in females. At the end of their study, they did not provide an explanation for this phenomenon. In many studies, HO was found to be more frequent in male and elderly individuals, as well as in patients with primary osteoarthritis [6]. Also in other studies, a high body mass index, low preoperative range of motion, length of operative time and large osteophytes were defined as high risk factors [3]. This could be the reason why HO is more frequent in females in this study (DDH is more frequent and the operative time is lengthened in these patients) [5].

The author's study is extremely valuable, but if they had a control group consisting of patients with isolated radiotherapy or an indomethacin group, then the comparison and distinction would be much easier. In some studies, even a single dose application of indomethacin was found to be effective in high-risk patients [2]. Also, this is the cheapest method of prophylaxis [2].

In conclusion, regarding the prosthetic treatment of hip fractures or osteoarthritis, HO risk factors should be clearly identified to decrease morbidity with low costs of prophylaxis. In our clinic, we use the C-reactive protein levels as a postoperative predictor of HO. We also use indomethacin because of its low cost and effectivity, regardless of the HO risk group, with convenience both for HO prophylaxis and for pain control in the postoperative setting.

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