

In Response

To THE EDITOR:

The authors received with great appreciation the valuable notes in the letter to the editor about our recently published article in the November 2020 issue of the *Pain Physician* journal titled "The effect of repeated paravertebral injections with local anesthetics and steroids on prevention of post-herpetic neuralgia"(1). The following are potential clarifications for the queries addressed in the letter to the Editor.

First, it is well known that age and compromised immunity are significant risk factors for the development of post-herpetic neuralgia (PHN) (2). The incidence of PHN goes up dramatically with age; 3% to 4% of adults 30 to 49 years old, 21% of those 60 to 69 years of age, 29% of those 70 to 79 years of age, and 34% in those over 80 years develop PHN. The risk is greater than 20% in those who are over 50 years old (3). In an attempt to reduce the heterogeneity of data and draw a clear conclusion, the authors focused on age as the most important innate risk factor to avoid the possible confounding impact of the wide spectrum of medical co-morbidities that might be associated immunosuppression and PHN. We have adopted this approach to minimize possible bias in the results of our study.

Second, a meta-analysis linked the risk of PHN with the severity of acute herpes zoster manifestations. Severe prodrome and greater acute pain, increased density of the eruption, and ophthalmic involvement were associated with increased risk of PHN (2). Moreover, all these risk factors can be used as predictors for PHN (4). Consequently, our study examined the effect of repeated paravertebral injections on the severity of the pain as well as the effect on the rate of recovery from skin lesions without discussing any relationship between pain severity and the severity of the skin lesions.

Third, recent meta-analyses reported favorable outcomes for early nerve blocks and confirmed a positive impact on the prevention of PHN (5,6). It also re-

ported more potent preventive effects of early nerve block performed with repetitive/continuous treatment modalities than single administration (5, 7-10). However, the number, frequency, and duration of the blocks have not been justified (4). Therefore, we conducted our study in a trial to determine the optimal duration and frequency of nerve blocks that prevent or maximally reduce the incidence of PHN. It is important to note that our institute adopts the Ten-Step Model several years ago for prevention of PHN (4). According to this policy it is not accepted to run a placebo-controlled study for a disease that may have negative impact on patients' quality of life.

Finally, the erector spinae plane (ESP) block seems to be safer and easier than paravertebral block. However, the approved technique in our institute for many years was fluoroscopic-guided paravertebral block in prone position. Prone position is well tolerated and the classic position in most of pain procedures. We have recently shifted to the use of ultrasound-guided techniques. Furthermore, we realize that ESP block is becoming more popular. However, more evidence is required to confirm the spread of local anesthetics injected in this plane to the sympathetic chain. Anatomically, thoracic paravertebral block is associated with consistent sympathetic block (9,11).

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