

Short-term efficacy of zoledronic acid in the treatment of 30 cases of SAPHO syndrome

Sirs,
Synovitis, acne, pustulosis, hyperostosis and osteitis (SAPHO) syndrome is a rare inflammatory disease which was proposed by French researchers, describing a series of osteoarticular and cutaneous manifestations (1). Remission of symptoms has been the goal of the treatments. We have reported that pamidronate had ideal efficacy to alleviate the manifestations of 30 SAPHO syndrome patients (2). Zoledronic acid, as another bisphosphate, may have the same efficacy with pamidronate. We have designed a retrospective study to clarify the short-term efficacy and safety profile of zoledronic acid in SAPHO syndrome patients, and the outcome was encouraging.

30 SAPHO syndrome patients who were treated in Fangshan Hospital of Beijing University of traditional Chinese medicine from October 2021 to August 2022 received intravenous infusion of zoledronic acid 4mg/d for 3 days. The inclusion criteria were consistent with the previous study about pamidronate. Visual analogue scale (VAS), Bath Ankylosing Spondylitis Disease Activity Index (BASDAI), Bath Ankylosing Spondylitis Functional Index (BASFI) and adverse effects were evaluated before and 3 days after the treatment. Baseline information of the patients are displayed in Supplementary Table S1. The data were then analysed in relation to the earlier study. These patients had received other therapy such as NSAIDs, but did not show ideal efficiency. Following treatment, the patients' VAS, BASDI, and BASFI scores significantly improved. We then compared the improvements with the research on pamidronate, and there was no significant difference between the 2 therapies (Fig. 1). Efficiency for other manifestation such as cutaneous involvement may require long term observation which cannot be provided in this study at present. During the study, side effects included fever, gastrointestinal discomfort and abnormal liver function associated with 21 events, which were less frequent compared with 65 events in pamidronate therapy (Suppl. Table S2). The 1 patient with liver function involvement was reported to have fatty liver before the treatment. The association between the abnormal liver enzyme level and the therapy remained unclear. There was no severe adverse event observed.

As a rare autoinflammatory disease, SAPHO syndrome still lacks standard treatment protocol. The usual treatments include non-steroidal anti-inflammatory drugs, disease-modifying anti-rheumatic drugs, glucocorticoids, antibiotics, biologicals and bisphosphonates (3). Current strategies cannot meet the requirement of comprehensive

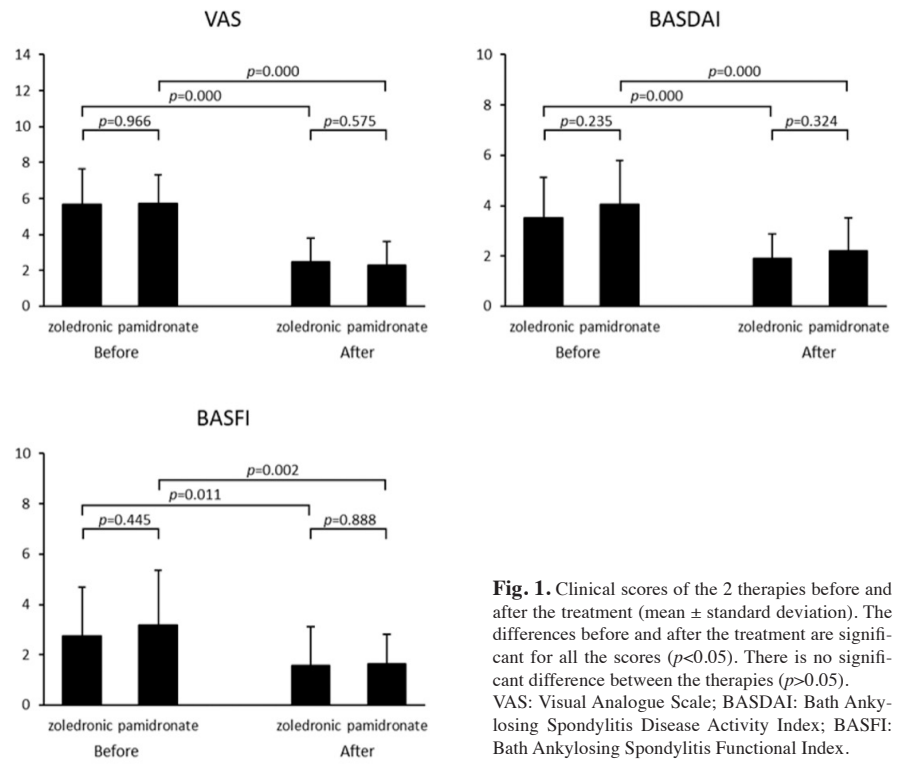


Fig. 1. Clinical scores of the 2 therapies before and after the treatment (mean ± standard deviation). The differences before and after the treatment are significant for all the scores ($p < 0.05$). There is no significant difference between the therapies ($p > 0.05$). VAS: Visual Analogue Scale; BASDAI: Bath Ankylosing Spondylitis Disease Activity Index; BASFI: Bath Ankylosing Spondylitis Functional Index.

symptom coverage and long-term effectiveness. It has been reported that diphosphates have the efficacy of anti-osteoclast and antiinflammation (4). The side effects reported for bisphosphonate intravenous infusion have been osteonecrosis of lower jaw and renal function involvement, while gastrointestinal discomfort and upper gastrointestinal toxicity such as oesophagitis are the common side effects for oral bisphosphonate (5). Our study indicated that zoledronic acid could gain good remission of pain and osteoarticular function similarly to pamidronate. The intravenous dropping time for pamidronate needed to be more than 4 hours, while zoledronic acid only needed 15 minutes. The significantly less infusion time may increase the compliance of patients. Besides, the incidence rate of adverse events in zoledronic acid therapy was quite lower than that in pamidronate therapy. Despite 1 patient with fatty liver reported about abnormal liver function, zoledronic acid was less likely to cause fever and gastrointestinal discomfort. It remains unclear about the difference of safety profile between these two therapies, but the less intravenous infusion time may point the way to an explanation. To our knowledge, this is the largest sample sized clinical observation study describing the efficacy of zoledronic acid treatment for SAPHO syndrome patients. However, our study was designed as a retrospective study with a short-term treatment. Prospective study with long-term intervention may be needed to confirm the incidence of adverse reaction and efficacy, and may display the effect on cutaneous

manifestation as the same with the previous study on pamidronate, which showed satisfying efficiency (6). Overall, zoledronic acid has the potential to be a favourable option for SAPHO syndrome with more convenient clinical management and less adverse event compared to pamidronate. Written informed consent was obtained from each patient. The Ethics Committee of Fangshan Hospital Beijing University of Chinese Medicine approved this trial (identifier: PZY JS-2021-002).

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Letters to the Editors

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