ORIGINAL ARTICLE

Comparison of the effects PRICE and POLICE treatment protocols on ankle function in patients with ankle sprain

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ABSTRACT

BACKGROUND: Ankle sprain is a frequent reason for presentation to the emergency department. Current treatment modalities include Protection, Optimal Loading, Ice, Compression, and Elevation (POLICE) and Protection, Rest, Ice, Compression, and Elevation (PRICE). This study aimed to compare the effects of PRICE and POLICE treatment protocols.

METHODS: This randomized controlled study was conducted between October 15, 2020, and October 15, 2021, at Ankara University's Department of Emergency Medicine. Double-blind randomization was used to assign patients to either the POLICE or PRICE treatment groups.

RESULTS: In total, 109 patients were included. In the POLICE group, the median difference between the American Orthopedic Foot and Ankle Scores on admission and the 14th day following the injury was 34.5 (IQR: 27.25–41.75), while that of the PRICE group was 24 (IQR: 15.5–35). In the POLICE group, the median value of the difference in the Foot and Ankle Disability Index scores on admission and the 14th day following the injury was 42 (IQR: 35.25–50), while that of the PRICE group was 31 (IQR: 22–41.5).

CONCLUSION: The POLICE treatment protocol provided more effective and faster recovery than the PRICE treatment protocol.

Keywords: Ankle sprain; emergency department; mobilization; pain; treatment.

INTRODUCTION

An ankle sprain is a leading cause of soft tissue trauma, which is a frequent reason for admission to the emergency department.[1] Ankle traumas constitute 5% of emergency department admissions and 40% of all sports traumas.[1] Its incidence is 1 in 10,000 people per day, and it causes pain and edema in the ankle. Soft-tissue trauma without fracture is observed in 5.7% of the patients.[2] A delay in treatment or incorrect treatment can cause chronic problems. Inflammation resulting from ankle sprain is an important process that initiates tissue regeneration and repair, but hematoma and edema delay healing and cause secondary ischemic damage to surrounding tissues.[2] The aim of acute injury management is to minimize hematoma and edema, reduce pain, and improve ankle function more quickly.[3]

Current treatment options consist of protection, optimal loading, ice, compression, and elevation (POLICE) and protection, rest, ice, compression, and elevation (PRICE).[2] There is no consensus among physicians regarding the application of these treatment protocols in patients with ankle sprains or which protocol should be used with which patients.[4] The aim of our study was to compare the effects of the PRICE and POLICE treatment protocols in the treatment of ankle sprain on improvement in ankle function, pain reduction, and edema treatment.

Cite this article as: Erdurmuş ÖY, Oğuz AB, Genç S, Koca A, Günalp Eneyli M, Polat O. Comparison of the effects PRICE and POLICE treatment protocols on ankle function in patients with ankle sprain. Ulus Travma Acil Cerrahi Derg 2023;29:920-928.

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Ulus Travma Acil Cerrahi Derg 2023;29(8):920-928 DOI: 10.14744/tjtes.2023.29797 Submitted: 04.02.2023 Revised: 23.03.2023 Accepted: 16.04.2023

MATERIALS AND METHODS

Study Design

This prospective randomized controlled study was conducted with the approval of the ethics committee between October 15, 2020, and October 15, 2021, at the Ankara University Faculty of Medicine, Department of Emergency Medicine (Code: I9-563-20). The study was conducted in accordance with the principles of the Declaration of Helsinki. Written informed consent was obtained from all participants before enrollment.

Inclusion and Exclusion Criteria

Patients aged 18–65 years who presented to the emergency department within the first 24 h after a lateral ankle sprain, in whom fracture and dislocation were excluded, who had good vital values, and who provided written and verbal consent were included in the study (Fig. 1). Patients with multiple trau-

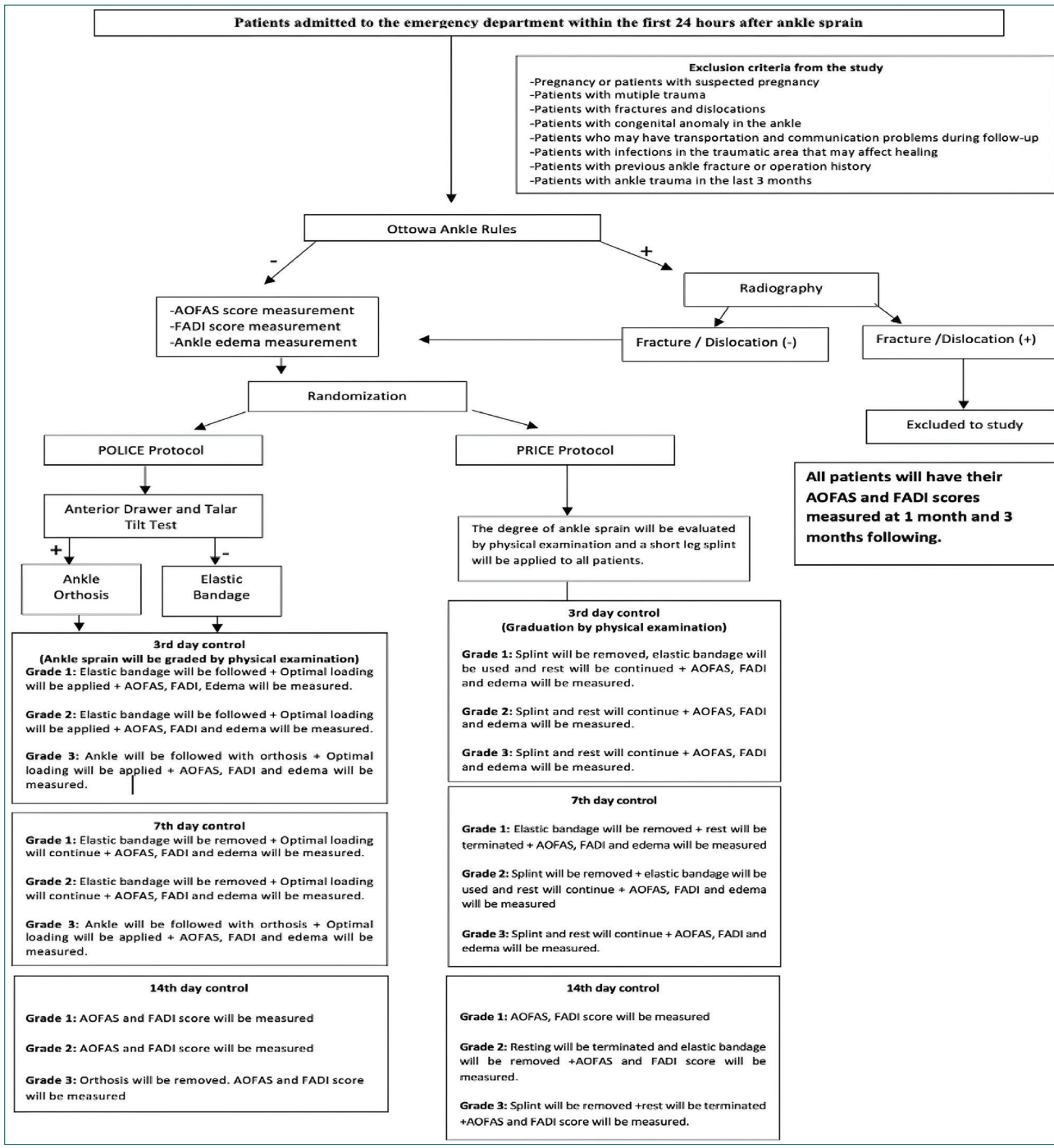

Figure 1. Flow chart.

ma, pregnancy, suspected pregnancy, foot, and ankle fractures and dislocations, forensic cases, patients who had a previous ankle operation or fracture, and patients who had had ankle trauma within the previous 3 months were excluded from the study. In addition, patients who were unable to use nonsteroidal anti-inflammatory drugs, those who could not be reached during the follow-up period, and those who did not attend follow-up appointments were excluded from the study (Fig. 2).

Sample Size Estimation

The differences between patients' baseline scores and Day 14 scores on the American Orthopedic Foot and Ankle Scores (AOFAS) and Foot and Ankle Disability Index (FADI) scales (AOFAS_14-AOFAS_0 and FADI_14-FADI_0) were accepted as the primary outcome variables of the study. Assuming that the group standard deviations would be 10 units and the difference between the group means would be 10 units (group 1:20±10 and group 2:10±10), 25 patients were assigned to each treatment group to perform the student's t-test at 80% power and a 1% error level. The stratified block randomization method was used to randomly assign patients to the treatment groups. Age and sex were used as stratification variables.

Primary Assessment

The data obtained from the patients included age, sex, occupation, body mass index, dominant foot, injured foot, comorbid diseases, medications used, and surgical history. Research-assistant physicians in the emergency department were informed of the study, and patient management, examinations, and treatments were explained. During the inclusion of patients in the study, the Ottawa Ankle Rules were used to exclude fractures and dislocations, and radiography was used when indicated. In suspicious cases in which a fracture could not be excluded by direct radiography, the patients were evaluated using computed tomography.

Patients admitted to the emergency department were randomized into PRICE or POLICE treatment groups according to age and sex. Since the patients' admission examinations may have been affected by acute trauma, they were referred to the hospital on the 3rd day after admission to grade their injuries. Patients in both protocols were evaluated using the ankle anterior drawer, posterior drawer, talar tilt, and squeeze tests. Patient examinations were conducted by an emergency medicine research assistant and an emergency medicine specialist (Fig. 1).

Randomization and Blinding

Patients were randomly assigned to one of two groups (POLICE or PRICE) using a computer-generated allocation table provided by the RANDOM.ORG website. Randomiza-

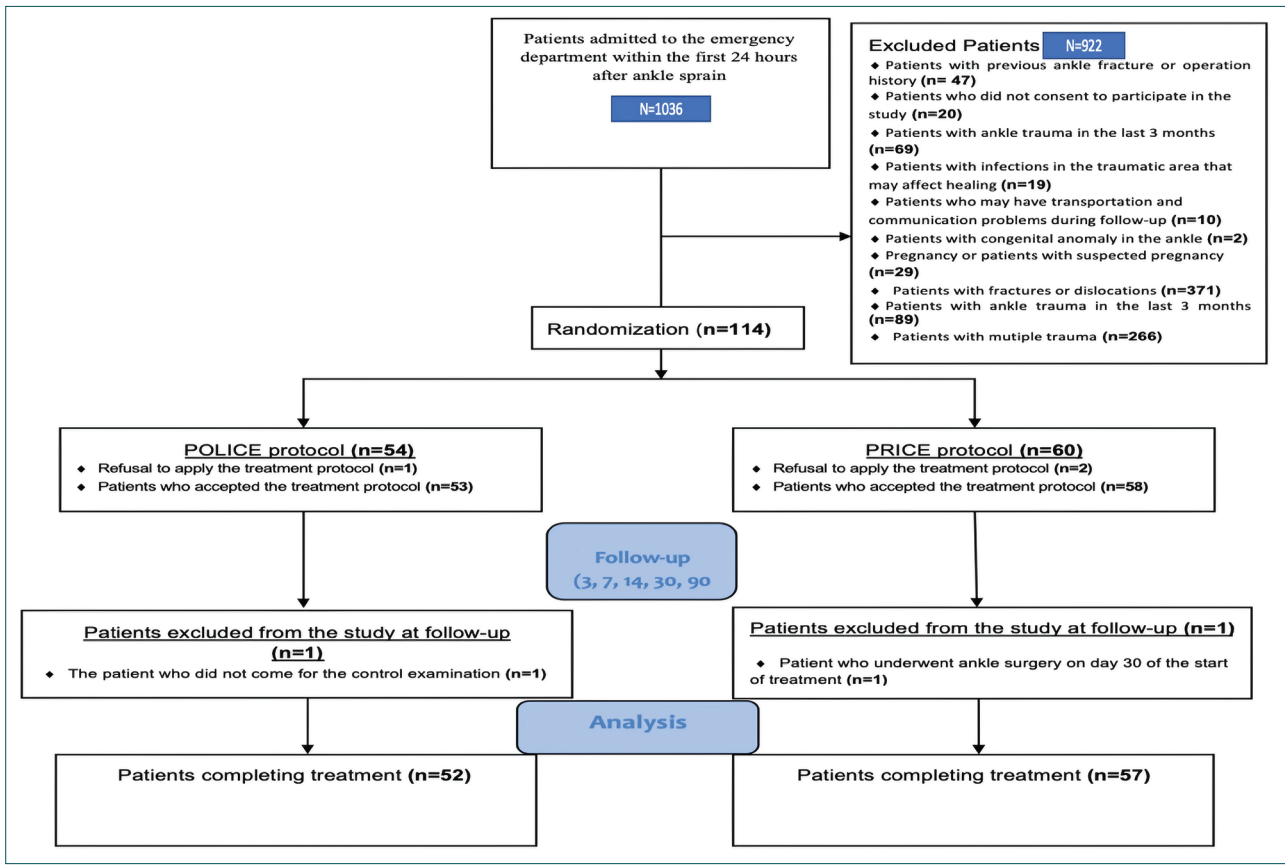

Figure 2. Consort flow diagram.

tion was stratified according to age and sex, and the treatment protocol to which the patients were assigned was determined by an emergency medicine specialist who did not see the patients and did not perform the examinations. The physical examinations, FADI, and AOFAS scores, and ankle circumference measurements of the patients taken during follow-up appointments were evaluated by a research assistant who was blinded to the treatment protocols the patients had received.

Interventions

The ankle injuries of patients treated with the PRICE protocol were protected and supported using a short leg splint. On the 3rd day following the injury, the patients returned to the hospital, and their injury was classified as grade 1, 2, or 3 on physical examination. For patients who were evaluated as grade 1, the splint was removed, an elastic bandage was wrapped around the ankle, and the patient was instructed to rest for 1 week. For patients evaluated as grade 2, the short leg splint was removed on the 7th day after the injury. In patients graded as grade 3, the short leg splint was removed after 14 days. All patients continued to complete the AOFAS and FADI scales on follow-up visits to the hospital, along with ankle edema measurements.

If the anterior drawer test and talar tilt test were positive in the physical examination at the time of presentation in patients who underwent the POLICE protocol, the injury was considered a grade 3 injury, and an ankle orthosis was applied. If the anterior drawer test was negative, the patient's ankle was wrapped in an elastic bandage, and the patient was given recommendations for optimal loading at the pain threshold, which is one of the elements of POLICE treatment. It includes flexion, extension, inversion, and eversion movements to the extent that the patient can tolerate the pain. Patients were instructed to apply the specified optimal loading at least 3 times a day for at least 20–30 min each time and to conduct their daily life activities to the limit of their pain threshold. Patients whose ankle sprain was evaluated as grade 1 were instructed to use an elastic bandage for 3 days. In patients whose ankle sprain was evaluated as grade 2, the elastic bandage was removed on the 7th day. Patients whose sprain was evaluated as grade 3 were directed to use the ankle orthosis and optimally load it to the pain threshold.

The patients in both treatment protocols were given analgesia in the form of oral nonsteroidal anti-inflammatory agents at the same dose and dosing intervals (Fig. 1). All patients continued to complete the AOFAS and FADI scales on follow-up visits to the hospital, along with ankle edema measurements.

Outcomes

During the initial evaluation, ankle function and pain were evaluated using the AOFAS and FADI scales, and ankle edema was detected using bimalleolar and figure-eight bandage techniques. Patients completed the AOFAS and FADI scales on the 3rd, 7th, 14th, 30th, and 90th days following presentation to the emergency department. Ankle edemas were followed up on the third and 7th days by measuring ankle circumference.

As a secondary outcome, a single-leg heel raise test was performed on traumatized ankles and non-traumatized ankles at the time of admission to the emergency department and on the 14th day of treatment to evaluate ankle plantar flexion strength, and these values were compared. In addition, recurrent ankle sprains during the 6-month follow-up period were recorded.

Statistical Analysis

IBM's Statistics Package for the Social Sciences version 26.0 was used for the data entry and statistical analysis of the data collected in the study. Frequency, percentage, mean, and standard deviation were calculated as descriptive statistics. The Chi-square or Fisher's exact test was used for categorical variables, the Student's t-test was used for continuous variables, and the Mann-Whitney U test was used for non-normally distributed variables. Ordinal variables were used for comparisons between the groups. In cases where repeated measurements were taken, an analysis of variance was used for the two-way repeated measurements. The Bonferroni correction was used for multiple comparisons; $P<0.01$ was considered statistically significant, and values where $P=0$ were reported as $P<0.001$.

RESULTS

In total, 109 patients were included in this study (Fig. 2). Sixty (55%) patients were female, and the mean age was 32.7±13 years (median: 27; IQR: 23–41). The mean body mass index of the patients was 25.16±3.94 (median: 25.1; IQR: 22.35–27) (Table 1). In 92 (84%) patients, the right foot was the dominant foot, and in 63 (57%) patients, the right ankle was the injured ankle. Thirty-five patients (32%) had grade 1 ankle sprains, 55 (51%) had grade 2 ankle sprains, and 19 (17%) had grade 3 ankle sprains.

In the POLICE group, the median value of the difference between the AOFAS scores on admission and the 14th day following the injury was 34.5 (IQR: 27.25–41.75), while that for the PRICE group was 24 (IQR: 15.5–35); this was statistically significant. The median value of the difference between the POLICE group's FADI scores on admission and the 14th day following the injury was 42 (IQR: 35.25–50), while that of the PRICE group was 31 (IQR: 22–41.5); this difference was statistically significant (Table 2). The error line graph, which compared the scores of the two treatment protocols, showed that the POLICE treatment protocol provided significantly faster recovery than the PRICE treatment proto-

Table 1. Demographic data of patients

	n=109
Age*	**32.7±13 (27-IQR: 23-41)**
BMI*	**25.16±3.94 (25.1-IQR: 22.35-27)**
Patients' AOFAS Score at baseline*	**60±15.53 (62-IQR: 52.5-70.5)**
Patients' FADI Score at baseline*	**53.9±17.32 (56-IQR: 45.5-66)**
Gender	
Female	60 (55%)
Male	49 (45%)
Degree of ankle sprain (Grade)	
Grade 1	35 (32%)
Grade 2	55 (50%)
Grade 3	19 (18%)
Treatment	
POLICE	52 (47%)
PRICE	57 (53%)
Dominant Foot	
Right	92 (84%)
Left	17 (16%)
Traumatic Foot	
Right	63 (57%)
Left	46 (43%)
Recurrent Ankle Sprain (6 mounths Follow-up)	
One or more resprains	35 (32%)
None	74 (68%)

*Values are expressed as median, interquartile range, and 95% confidence intervals, respectively.

col (Fig. 3). When the pain scores were evaluated separately, no statistically significant difference was found between the POLICE and PRICE treatment groups in terms of the values on the day of admission to the emergency department and the third and 7th days following injury (Mann-Whitney U test, P>0.05).

Subgroup analyses were performed according to ankle sprain grading for patients in both treatment protocols. In patients in the POLICE group with a grade 1 ankle sprain, the mean value of the difference in AOFAS scores upon admission and on the 14th day following the injury was 26.4±7.28, while for the PRICE group, the mean value of the difference was 15.38±8.61; this difference was statistically significant (P<0.001, Student's t-test). In the POLICE group, the mean value of the difference between the FADI scores on admission and on the 14th day was 31.94±9.03, while for the PRICE group, the mean value of the difference was 22.83±8.07; this difference was statistically significant (P<0.05, Student's t-test).

In the patients in the POLICE group with grade 2 ankle sprains, the mean value of the difference between the AOFAS scores on admission and on the 14th day following the injury was 36.7±9.2, while for the PRICE group, the mean value of the difference was 23.96±8.3; the difference was statistically significant (P<0.001, Student's t-test). In the POLICE group, the mean value of the difference between the FADI scores on admission and on the 14th day following the injury was 45.96±10.25, while for the PRICE group, the mean value of the difference was 33.14±10.58; the difference was statistically significant (P<0.05, Student's t-test).

In patients in the POLICE group with grade 3 ankle sprains, the mean value of the difference between the AOFAS scores on admission and on the 14th day following the injury was 61±10.23, while for the PRICE group, the mean value of the difference was 41.27±9.33; the difference was statistically significant (P<0.001, Student's t-test). In the POLICE group, the mean value of the difference between the FADI scores on admission and on the 14th day following the injury was 69.87±14.87, while in the PRICE group, the mean value of the

Table 2. Evaluation of the effect of PRICE and POLICE treatment protocols on the improvement of ankle functions by days between the AOFAS and FADI scoring systems

Difference	Scores	PRICE	POLICE	P*-value
Baseline-3rd day	AOFAS	10 (IQR: 3-13) (7.5-11.8)	19 (IQR: 13.25-26.75) (18.4-23.5)	**P<0.001**
	FADI	10 (IQR: 5-18) (9.7-14.4)	21 (IQR: 16-29) (20-24.9)	**P<0.001**
Baseline-7th day	AOFAS	16 (IQR: 10-25) (14.6-20.3)	33 (IQR: 26-39) (31-37.5)	**P<0.001**
	FADI	20 (IQR: 14-29.5) (19.2-25)	38 (IQR: 33-45.75) (36.3-43.7)	**P<0.001**
Baseline-14th day	AOFAS	**24 (IQR: 15.5-35) (21.3-27.9)**	**34,5 (IQR: 27.2-41.7) (33.1-41)**	**P<0.001**
	FADI	**31 (IQR: 22-41.5) (29.5-36.8)**	**42 (IQR: 35.25-50) (40.5-49.6)**	**P<0.001**
Baseline-30th day	AOFAS	28 (IQR: 20-41) (27.8-35.6)	35 (IQR: 27.25-42) (33.5-41.6)	**P<0.05**
	FADI	38 (IQR: 30.5-49.5) (37-45.4)	44 (IQR: 36-50.75) (41.2-50.2)	P=0.072
Baseline-90th day	AOFAS	34 (IQR: 24.5-47) (32.3-40.7)	35 (IQR: 28.25-42) (33.7-41.8)	P=0.574
	FADI	43 (IQR: 32-54.50) (40.8-49.5)	44 (IQR: 36-50.75) (41.6-51)	P=0.542

*P value was evaluated with the Mann Whitney U Test and P<0.05 was considered significant. Values are expressed as median, interquartile range, and 95% confidence intervals, respectively.

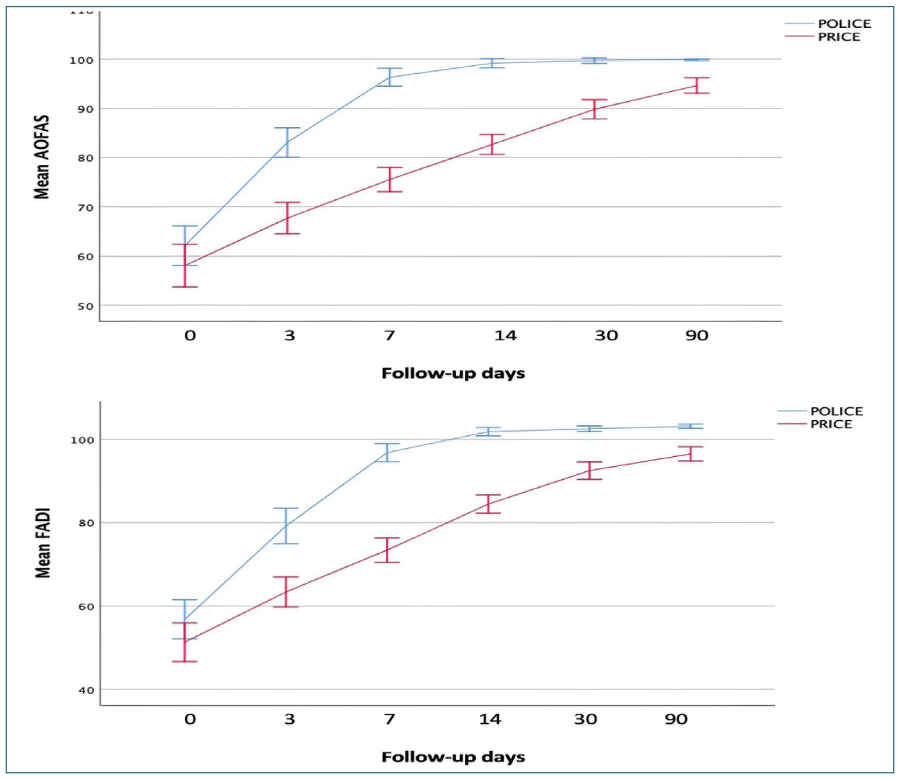

Figure 3. Line-error graph of AOFAS and FADI scores on admission and control days of both treatment protocols.

Table 3. Traumatized ankle circumference measurements data of patients in PRICE-POLICE treatment protocols

Measurement Days	Method	PRICE	POLICE	P*-value
Baseline	Bimalleolar Measurement (cm)	29.2 (IQR: 27.3-30.9) (28.4-29.7)	29,05 (IQR: 26.6-30.5) (28-29.5)	P=0.62
	Figure of Eight Measurement (cm)	60 (IQR: 58-61) (58.5-60)	59,7 (IQR: 58-61.5) (58.3-60)	P=0.81
3rd day	Bimalleolar Measurement (cm)	28 (IQR: 25.8-30) (27.2-28.5)	27,7 (IQR: 25.6-29.7) (27-28.2)	P=0.61
	Figure of Eight Measurement (cm)	58.1 (IQR: 55.95-60.3) (57-58.5)	57,8 (IQR: 55.92-60.1) (56.7-58.4)	P=0.78
7th day	Bimalleolar Measurement (cm)	26.9 (IQR: 25.1-28.95) (26.5-27.7)	26,1 (IQR: 25-28.85) (26-27.2)	P=0.29
	Figure of Eight Measurement (cm)	57 (IQR: 55.05-58.65) (55.7-57.3)	56,4 (IQR: 55-58.97) (55.5-57.2)	P=0.77

*P value was evaluated with the Mann Whitney U Test and P<0.05 was considered significant. Values are expressed as median, interquartile range, and 95% confidence intervals, respectively. Traumatized ankle circumference measurements data of patients in PRICE-POLICE treatment protocols.

difference was 50.09±11.92; the difference was statistically significant (P<0.05, Student's t-test).

The POLICE and PRICE groups were compared in terms of ankle edema, which was evaluated using the Bimalleolar and figure-of-eight bandage techniques. No statistically significant differences were found between the two groups (Table 3).

In the POLICE treatment group, the median value of the single-leg heel-raise test on the 14th day of treatment was 0.61 (IQR: 0.52–0.70), while it was 0.31 (IQR: 0.25–0.36) in the PRICE group; the difference was statistically significant. Recurrent ankle sprains were statistically higher in the PRICE group (Risk Ratio: 5.474, Relative Risk Reduction: 0.81, Number Needed to Treat: 2.32, 95% CI: 2.29–13.05).

One of the secondary outcomes of our study was to determine whether the degree of ankle sprain changed between the patients' examination on the day of admission and the 3rd day and whether the grade of ankle sprain did not change as a result of the examinations on both days (P>0.05, Wilcoxon test). The effects of the POLICE and PRICE protocols on treatment were compared according to the age and BMI of the patients, and no statistically significant difference was found. The effects of the POLICE and PRICE protocols were evaluated according to the sex of the patients, and no statistically significant difference was found between the sexes. The effects of the POLICE and PRICE treatment protocols were evaluated in terms of whether the injured ankle was dominant or not, and no statistical differences were found.

DISCUSSION

The diagnosis and treatment stages of ankle sprain, which is one of the most common reasons for presentation in emergency departments, are very important.[1] Physicians should follow the current approaches to treatment and choose the most appropriate protocols for their patients. Delays in diagnosis and incorrect treatment may cause recurrent emergency department admissions, permanent damage to ankle function, and loss of workforce.[5]

In the treatment of inversion ankle sprain, two different treatment protocols are used: PRICE and POLICE.[6] Although previous studies have investigated the POLICE protocol, including early mobilization, there is no consensus on how this treatment protocol should be applied.[4,6] In a small number of studies, early mobilization was found to be quite effective in the treatment of patients with grade 1 and grade 2 ankle sprains, especially in patients who received the PRICE protocol.[7,8] However, immobilization could not be completely removed from the treatment in these studies, and the comparison of traditional methods with early mobilization methods remains weak.[8]

In our study, the occurrence of recurrent ankle sprains during the treatment process and in the following 6 months in patients who received the POLICE and PRICE treatment protocols was evaluated, and recurrent ankle sprains were found to be higher in patients in the PRICE treatment group. Recurrent ankle sprain can be caused by insufficient healing of the injured ankle as well as a decrease in the muscle strength of the non-injured support foot as a result of immobilization during the treatment process. In their meta-analysis of 46 studies, Doherty et al.[9] showed that patients who under-

went early mobilization had fewer recurrent ankle sprains. Bleakley et al.[10] reported similar findings in their meta-analysis and concluded that the possibility of recurrent ankle sprains was reduced by early mobilization and rehabilitation programs. The fact that the literature has found recurrent ankle sprains, especially in the first 3 months following the initial injury, shows the ineffectiveness of the treatment and suggests that treatment protocols that provide early mobilization result in better recovery.[11]

Currently, both PRICE and POLICE treatment protocols are used to treat ankle sprains.[12] However, few studies have compared the effects of these treatment protocols. A recent study compared the immobilization treatment protocol versus the mobilization treatment protocol. In this study, the effect of supervised physiotherapy on recovery in patients who applied to the emergency department due to ankle sprain was investigated. The study found no evidence to support a clinically significant improvement in outcome with the addition of supervised physiotherapy to usual care. However, in this study, some mobilization treatment methods were also used in patients who did not receive physiotherapy but received standard treatment.[13]

In practice, the POLICE treatment protocol varies, and the ideal application technique has not yet been determined.[11] Mobilization methods In the study of Norouzi et al., mobilization methods were compared in patients who applied to the emergency department with ankle sprain. However, the effectiveness of the methods used against each other has not been proven.[14] In our study, the POLICE treatment protocol was created with optimal loading to the pain threshold in patients who presented to the emergency department with complaints of ankle sprain.

The POLICE treatment protocol is a method by which mobilization is encouraged compared with the traditional PRICE treatment protocol. For this reason, it might be thought that this method would cause pain during the acute period in patients with ankle sprain and would not be preferred by the patients. However, our statistical analyses revealed no clinically or statistically significant differences between the two treatment groups in terms of the patients' AOFAS or FADI pain scores. In our study, patients in both treatment groups received the same dose of NSAIDs for the same duration to avoid bias. Our results showed that optimal loading in the POLICE treatment protocol was useful, as it did not increase pain and provided faster recovery. Another recent study found similar results, and the POLICE treatment protocol has been shown to reduce ankle pain and accelerate recovery.[15]

Strengths and Limitations

Our study has some limitations. First, a physical examination was performed to grade the patients' ankle sprains. Although physical examination can be used to grade ankle sprains, magnetic resonance imaging (MRI) provides a definitive diagnosis.[16] Considering emergency department conditions, using MRI to grade ankle sprain is very challenging, and we could not use this imaging method in our study. Another limitation is that the AOFAS and FADI scores were used to compare the treatment protocols. Both scales included sections in which pain was evaluated, and these scores were included in the total score. Apart from these measurements, no other objective scoring measure was used to evaluate the patients' pain.

CONCLUSION

As a result of our study, we determined that the POLICE treatment protocol with optimal loading to the pain threshold, which has advantages for use in emergency services, provides earlier recovery and reduces the time to return to work compared with the PRICE treatment protocol, thus reducing the impact on the workforce. In addition, recurrent ankle sprains and chronic problems were less common in patients treated with the POLICE protocol, and the use of the POLICE treatment protocol in patients presenting with acute ankle injuries is widespread. Further studies are needed to clarify its benefits for patients.

Ethics Committee Approval: This study was approved by the Ankara University Faculty of Medicine Human Research Ethics Committee (Date: 15.10.2020, Decision No: 19-563-20).

Peer-review: Externally peer-reviewed.

Authorship Contributions: Concept: Ö.Y.E., S.G.; Design: Ö.Y.E., S.G.; Supervision: Ö.Y.E., S.G., A.K.; Materials: M.G.E., Ö.Y.E.; Data collection and/or processing: Ö.Y.E., A.K., M.G.E.; Analysis and/or interpretation: Ö.Y.E., O.P., A.K.; Literature search: Ö.Y.E., A.B.O., O.P.; Writing: Ö.Y.E., A.B.O.; Critical review: O.P., M.G.E., A.B.O.

Conflict of Interest: None declared.

Financial Disclosure: The authors declared that this study has received no financial support.

REFERENCES

1. Fallat L, Grimm DJ, Saracco JA. Sprained ankle syndrome: Prevalence and analysis of 639 acute injuries. J Foot Ankle Surg 1998;37:280–5. [CrossRef]
2. Chen ET, McInnis KC, Borg-Stein J. Ankle sprains: Evaluation, rehabilitation, and prevention. Curr Sports Med Rep 2019;18:217. [CrossRef]
3. Merrick MA. Secondary injury after musculoskeletal trauma: A review and update. J Athl Train 2002;37:209–17.
4. Glasgow P, Phillips N, Bleakley C. Optimal loading: Key variables and mechanisms. Br J Sports Med 2015;49:278–9. [CrossRef]
5. Tully MA, Bleakley CM, O'Connor SR, McDonough SM. Functional management of ankle sprains: What volume and intensity of walking is undertaken in the first week postinjury. Br J Sports Med 2012;46:877–82. [CrossRef]
6. van den Bekerom MP, Struijs PA, Blankevoort L, Welling L, van Dijk CN, Kerkhoffs GM. What is the evidence for rest, ice, compression, and elevation therapy in the treatment of ankle sprains in adults? J Athl Train 2012;47:435–43. [CrossRef]

7. van Rijn RM. Early therapeutic exercise in the first week after grade 1 or 2 ankle sprain improves subjective ankle function compared to standard RICE treatment. BMJ Evid Based Med 2010;15:141–2. [CrossRef]
8. Salim NS, Umar MA, Shaharudin S. Effects of the standard physiotherapy programme on pain and isokinetic ankle strength in individuals with grade I ankle sprain. J Taibah Univ Med Sci 2018;13:576–81. [CrossRef]
9. Doherty C, Bleakley C, Delahunt E, Holden S. Treatment and prevention of acute and recurrent ankle sprain: An overview of systematic reviews with meta-analysis. Br J Sports Med 2017;51:113–25. [CrossRef]
10. Bleakley CM, Taylor JB, Dischiavi SL, Doherty C, Delahunt E. Rehabilitation exercises reduce reinjury post ankle sprain, but the content and parameters of an optimal exercise program have yet to be established: A systematic review and meta-analysis. Arch Phys Med Rehabil 2019;100:1367–75. [CrossRef]
11. Ortega-Avila AB, Cervera-Garvi P, Marchena-Rodriguez A, Chicharro-Luna E, Nester CJ, Starbuck C, et al. Conservative treatment for acute ankle sprain: A systematic review. J Clin Med 2020;9:3128. [CrossRef]
12. Bleakley CM, Glasgow P, MacAuley DC. PRICE needs updating, should we call the POLICE? Br J Sports Med 2012;46:220–1. [CrossRef]
13. Brison RJ, Day AG, Pelland L, Pickett W, Johnson AP, Aiken A, et al. Effect of early supervised physiotherapy on recovery from acute ankle sprain: Randomised controlled trial. BMJ 2016;355:i5650. [CrossRef]
14. Norouzi A, Delkhoush CT, Mirmohammadkhani M, Bagheri R. A comparison of mobilization and mobilization with movement on pain and range of motion in people with lateral ankle sprain: A randomized clinical trial. J Bodyw Mov Ther 2021;27:654–60. [CrossRef]
15. Li S, Ding M. Tertiary rehabilitation in acute ankle sprain caused by sports training. J Back Musculoskelet Rehabil 2022;35:867–72. [CrossRef]
16. Tan DW, Teh DJ, Chee YH. Accuracy of magnetic resonance imaging in diagnosing lateral ankle ligament injuries: A comparative study with surgical findings and timings of scans. Asia Pac J Sports Med Arthrosc Rehabil Technol 2017;7:15–20. [CrossRef]

ORİJİNAL ÇALIŞMA - *ÖZ*

Ayak bileği burkulması olan hastalarda PRICE ve POLICE tedavi protokollerinin ayak bileği fonksiyonu üzerindeki etkilerinin karşılaştırılması

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AMAÇ: Ayak bileği burkulması acil servise sık başvuru nedenidir. Mevcut tedavi modaliteleri arasında Koruma, Optimal Yükleme, Buz uygulama, Kompresyon ve Elevasyon (POLICE) ve Koruma, Dinlenme, Buz uygulama, Kompresyon ve Elevasyon (PRICE) yer alır. Bu çalışma PRICE ve POLICE tedavi protokollerinin etkilerini karşılaştırmayı amaçlamıştır.
GEREÇ VE YÖNTEM: Bu randomize kontrollü çalışma, 15 Ekim 2020 ile 15 Ekim 2021 tarihleri arasında Ankara Üniversitesi Acil Tıp Anabilim Dalı'nda gerçekleştirildi. Hastaları POLICE veya PRICE tedavi gruplarına atamak için çift kör randomizasyon kullanıldı.
BULGULAR: Toplam 109 hasta alındı. POLICE grubunda, başvuru anındaki ve yaralanmayı takip eden 14. gündeki Amerikan Ortopedik Ayak ve Ayak Bileği Skorları (AOFAS) arasındaki medyan fark 34.5 (IQR: 27.25–41.75), PRICE grubununki ise 24 (IQR: IQR: 15.5–35). POLICE grubunda başvuru anındaki ve yaralanmayı takip eden 14. gündeki Ayak ve Ayak Bileği Özürlülük İndeksi (FADI) skorlarındaki farkın ortanca değeri 42 (IQR: 35.25–50), PRICE grubununki ise 31 olarak saptandı (IQR: 22–41.5).
SONUÇ: POLICE tedavi protokolü, PRICE tedavi protokolüne göre daha etkili ve hızlı iyileşme sağladı.

Anahtar sözcükler: Ayak bileği burkulması; acil tıp; mobilizasyon; ağrı; tedavi.

Ulus Travma Acil Cerrahi Derg 2023;29(8):920-928 DOI: 10.14744/tjtes.2023.29797