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ORIGINAL RESEARCH

Is Low-Dose Dextrose Prolotherapy as Effective as High-Dose Dextrose Prolotherapy in the Treatment of Lateral Epicondylitis? A Double-Blind, Ultrasound Guided, Randomized Controlled Study

Yıldız Gonca Dogru Ciftci, MD,[a] Figen Tuncay, MD, PhD,[b] Fatmanur Aybala Kocak, MD, PhD,[b] Mehmet Okcu, MD[c]

From the [a]Department of Physical Medicine and Rehabilitation, Sisli Etfal Hamidiye Research Hospital, Istanbul, Turkey; [b]Department of Physical Medicine and Rehabilitation, Kirsehir Ahi Evran University Faculty of Medicine, Kirsehir, Turkey; and [c]Department of Physical Medicine and Rehabilitation, Marmara University Faculty of Medicine, Istanbul, Turkey.

Abstract

Objectives: To investigate the effects of prolotherapy (PrT) on pain, functionality, clinical improvement and to compare the 5% low and 15% high dose dextrose PrT in chronic lateral epicondylitis.

Design: A double-blind, parallel groups, randomized controlled study.

Settings: Outpatient Clinic.

Participants: Sixty patients (N=60), aged 44.30±10.31 years old, with chronic lateral epicondylitis were allocated randomly into 3 groups.

Interventions: To Group 1 5% dextrose PrT, to Group 2 15% dextrose PrT, to Group 3 0.9% saline injections were done at 3 times (weeks 0, 3, 6), to the entheses of forearm extensors and annular ligament.

Main Outcome Measures: The primary outcomes were handgrip strength, visual analog scale-rest (VAS-R), visual analog scale-activity (VAS-A), pressure-pain threshold, and Quick Disability of the Arm, Shoulder and Hand (Q-DASH). The secondary outcomes were clinical improvement (Disease Global Assessment Questionnaire), side effects, and complications. Primary outcomes were collected at baseline week 0, week 3, and 12. Secondary outcomes were collected at weeks 3 and 12.

Results: In Group 2, VAS-A and VAS-R (at week 3), handgrip strength and pressure-pain threshold (at week 12) were significantly different than other groups ($P<.05$). In Groups 1 and 2, there was a difference in primary outcomes at week 12 than baseline ($P<.05$). In Group 3, there was no difference in VAS-R, VAS-A, and handgrip strength at weeks 3 and 12 than baseline ($P>.05$).

Conclusion: In chronic lateral epicondylitis, 5% and 15% dextrose PrT is more effective in pain, handgrip strength, functionality, and clinical improvement than %0.9 saline. There was no difference in functionality, clinical improvement, side effects, and complications between the PrT groups. 15% dextrose PrT was more effective in handgrip strength and pressure-pain threshold at week 12 and pain at week 3. We recommend 15% dextrose PrT based on this study.

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Lateral epicondylitis (tennis elbow) is an enthesopathy at the forearm extensor muscles junction. Most commonly, the extensor carpi radialis brevis is affected.[1] It is the most common cause of elbow pain, a prevalence of 0.4%-10% and an incidence of 1%-3% in the adult population.[2] Lateral epicondylitis is an immense social and economic burden because it can cause a loss of workforce.[3]

Conservative treatment are first-line in lateral epicondylitis, such as rest, bracing, non-steroidal anti-inflammatory drugs,

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physical therapy modalities (extracorporeal shock wave therapy, laser, ultrasound), exercise, and injection treatments.[4] Many injection methods are applicable, such as autologous blood, platelet rich plasma, botulinum toxin, ozone-oxygen solution, hyaluronic acid, dextrose, and corticosteroid injection. Various surgical treatment methods are applied if it remains unresponsive to conservative treatments.[5]

Prolotherapy (PrT), known as regenerative therapy, which has gained importance in recent years, with low side effects and costs. PrT is performed by injecting irritant and osmotic solutions that activate inflammation in the target tissue into painful ligaments, tendon attachments, and/or adjacent joint spaces.[6] PrT applications vary according to the clinical situation and the preference of the practicing clinician.[7] PrT injections' pain reduction and regeneration mechanisms have not been determined entirely and it has been suggested that the local iatrogenic inflammation induces fibroblastic growth and collagen synthesis, resulting in stronger repair of damaged fibers in the lateral epicondyle.[8]

This study aims to compare low dose with 5% dextrose and high dose with 15% dextrose PrT in clinical improvement, reduction of rest and activity pain, an increase in handgrip strength, pressure pain threshold, functionality, and side effects/complications in chronic lateral epicondylitis.

Methods

Design and setting

In this prospective, randomized controlled, double-blind study was conducted between January and October 2021. All patients were recruited from the Kirsehir Ahi Evran University Physical Medicine and Rehabilitation Hospital Outpatient Clinic. Ethics committee approval (Kayseri GETAT Ethics Committee) and all patients' written consent were obtained.

Participants

The included participants are who diagnosed as chronic lateral epicondylitis, aged 18-65, had pain and function limitations for at least 3 months. Participants were excluded who had previous injection, surgery or trauma within 3 months, an infection and allergy in the treatment area, non-aspirin anticoagulant usage, unregulated hypertension, immune dysfunction, active endocrine and neurologic disorder, malignancy, pregnancy, and lactation.

Randomizing and blinding

A sealed, sequentially numbered, opaque envelopes randomly allocated the participants into 3 groups; Group 1 5% dextrose PrT, Group 2 with 15% dextrose PrT, and Group 3 0.9% saline. An author blinded to group allocation collected all the outcome measures.

List of abbreviations:

DGAQ	**Disease Global Assessment Questionnaire**
PrT	**prolotherapy**
Q-DASH	**Quick Disability of the Arm, Shoulder and Hand**
VAS-A	**visual analog scale-activity**
VAS-R	**visual analog scale-rest**

Intervention

To Group 1 5% dextrose, to Group 2 15% dextrose, and to Group 3 0.9% saline solutions were applied 3 times (weeks 0, 3, and 6), with an interval of 3 weeks. The clinician (Y.G.D.C.) performed the clinical examination, diagnosis, treatment, and follow-ups. Injections were done after sterilization of the related area, using 1 ml solution, with a 27 gauge 2 inch (0.40 × 50 mm, dental type) needle into the enthesis area of the extensor muscle origins in the lateral epicondyle and the annular ligament, with in-plane technique by musculoskeletal ultrasound. The solutions were prepared and labeled by a health care professional who did not apply the treatment.

Patients in all groups were given wrist and finger extensors in the dorsal forearm stretching, elbow joint range of motion, eccentric and concentric strengthening exercises, and myofascial mobilization twice a day as a home program. It was recommended that patients do not use non-steroidal anti-inflammatory drugs or steroids for 3 days before the injection and between the sessions, and if there is any pain after the injection, resting, cold applying for 5 minutes and usage of parasetamol tablets were recommended. Patients were informed to contact the relevant clinician in case of any side effects or complications.

Primary outcome measures

Visual analog scale (VAS)

Elbow pain at rest (VAS-R) and activity (VAS-A) was assessed with the VAS at weeks 0, 3, and 12. VAS is a 10 cm line drawn horizontally on white paper. The words "no pain" on the left end and "the most severe pain you have ever encountered in your life" are on the right. It was explained to the patient that their pain severity increased from left to right, and the patient was asked to mark the severity of their pain separately on the line at rest and movement.[9]

Handgrip strength

Handgrip strength was measured with Jamar Hand Dynamometer developed by the American Hand Therapist Society and had high validity and reliability.[10] The evaluation had been done in the position of the affected arm adducted, elbow 90 degrees flexed. Patients were asked to squeeze the dynamometer for at least 3 seconds with maximum contraction, and a total of 3 measurements were made at 1-minute intervals. The average of the 3 measurements was recorded in kilograms.

Pressure-pain threshold

The patient was asked to tell the level of discomfort by pressing the most sensitive area in the lateral epicondyle region with an algometer device at a right angle. The pressure value causing the feeling of pain was determined as the pain threshold, and it was evaluated objectively with the values obtained in kilograms.[11]

Quick Disability of the Arm, Shoulder and Hand (Q-DASH)

The Quick Disability of the Arm, Shoulder and Hand is an 11-question survey. Each question is evaluated in 5 levels according to the difficulty level. For example, the patient does the activity

without difficulty; 1 point is given, and the patient cannot do it at all; 5 points are given. The test's formula calculates results. Measuring physical function and symptoms in patients with upper extremity problems is a questionnaire with proven validity and reliability in Turkish.[10]

Secondary outcome measures

Evaluation of the clinical improvement

Clinical improvement of the patients was evaluated subjectively with the Disease Global Assessment Questionnaire (DGAQ). The items in this questionnaire are as follows: "3 points=near normal, 2 points=significant improvement, 1 point=slight improvement, 0=no change, -1=worsening".[12]

Evaluation of the injection side effects and complications

Side effects and complications after injection treatments were evaluated and compared between groups.

Primary outcomes were collected at weeks 0, 3, and 12, and secondary outcomes were collected at weeks 3 and 12.

Sample size

Power analysis was performed before the study. In this context, it was noted that a total of 57 cases were required, with estimations of activity VAS scores and alpha 0.05, beta 0.20, and at least 0.80 power. Therefore, at least 20 cases for each group were included, and the VAS-A recorded at weeks 3 and 12 were used to calculate, and it was determined that the power of the study was over 80%.

Statistical analysis

SPSS (Statistical Package for the Social Sciences) 22 package programs were used for statistical analysis of the data. Categorical (non-parametric) measurements were summarized as numbers and percentages, continuous measurements as mean and standard deviation (median and minimum-maximum where necessary). Shapiro-Wilk test was used to determine whether the data in the study showed normal distribution. One-Way ANOVA was used for the comparisons between groups for normally distributed parameters, ANOVA was used for repetitive measurements in group comparisons, the Tukey test was used if the variances were homogeneous in the case of significance, and the Tamhane test was used if they were not homogeneous. Bonferroni correction was made for the significance level (P=.016 was accepted), and Chi-Square exact test was performed for non-parametric data. The statistical significance level was taken as 0.05 in the tests.

Results

Figure 1 (Consolidated Standards of Reporting Trials)[13] displays the flow diagram for all patients in the study. Of the 75 evaluated patients, 63 were included as eligible for the study, 1 patient in Group 1 and 2 patients in Group 3 were withdrawn from the study and were not included in the analysis.

Table 1 displays the patients' age, sex, dominant hands, the extremity of the affected side, duration of symptoms, and occupations. Although duration of symptoms were higher in Group 2 (14.55±2.60 months), there was no statistically significant difference between the groups (P>.05). Table 2 displays comparison of primary and secondary results within and between groups.

Between-group comparison

In VAS-A and VAS-R, while there was no difference at week 0 (P>.05), a significant decrease was found at weeks 3 and 12 (P<.001). The decrease was statistically higher in Group 2 than in Group 1 at week 3 (P<.05). At week 12, the decrease in VAS-R and VAS-A was higher in both PrT groups (P<.05) and the decrease in VAS-A was higher in Group 2 than in Group 1 (P<.05) (figs 2 and 3).

In handgrip strength, while there was no improvement at weeks 0 and 3 (P>.05), a significant increase was found at week 12 (P=.005). A statistically significant increase was found in Group 2 compared with the Group 1 at week 12 (P<.05).

While there was no significant increase in pressure-pain threshold at week 0 (P>.05), a significant increase was found in Group 1 and 2 at weeks 3 and 12 (P<.05). In addition, at week 12, a statistically significant increase was found in Group 2 than in Group 1 (P<.05).

The Q-DASH scores, while there was no difference at baseline week 0 (P>.05), scores were lower in Group 1 and 2 than in Group 3 at weeks 3 and 12 (P<.05). There was no difference between Groups 1 and 2 at weeks 3 and 12 (P>.05).

A decrease was found in DGAQ at weeks 3 and 12 (P=.001). In Groups 1 and 2, the scores were significantly higher than in Group 3 (P<.05).

There was no difference regarding side effects and complications (P>.05). Two patients in Group 2 had pain and 1 patient in Group 3 had a rash at the injection site after the injection. No severe side effects or complications were encountered.

Within-group comparison

In Group 1, there was a significant increase in VAS-R and VAS-A between weeks 0-12 and 3-12 (P<.05). Furthermore, a significant improvement was found in handgrip strength, pressure-pain threshold, Q-DASH in between weeks 0-3, 0-12, and 3-12 (P<.05).

In Group 2, there was a significant difference in VAS-A, pressure-pain threshold, and Q-DASH between weeks 0-3, 0-12, and 3-12 (P<.05). Moreover, there was a significant improvement in VAS-R between weeks 0-3 and 0-12, handgrip strength between weeks 0-12 and 3-12 (P<.05). In both PrT groups, there was a difference between weeks 3 and 12 (P<.001), but there was no difference between PrT groups in DGAQ (P>.05).

There was no difference in VAS-R, VAS-A, handgrip strength, or DGAQ before and after treatment in group 3 (P>.05), but in pressure-pain threshold between weeks 0-12 and handgrip strength between weeks 0-12 and 3-12 there was an improvement (P<.05).

Discussion

In this study, 5% and 15% dextrose PrT were more effective than 0.9% saline in reducing pain, increasing handgrip strength, functionality, and clinical improvement. Furthermore, when PrT groups were compared, 15% dextrose PrT was more effective in increasing handgrip strength, algometer scores and VAS-A at week 12, in VAS-R at week 3 in chronic lateral epicondylitis.

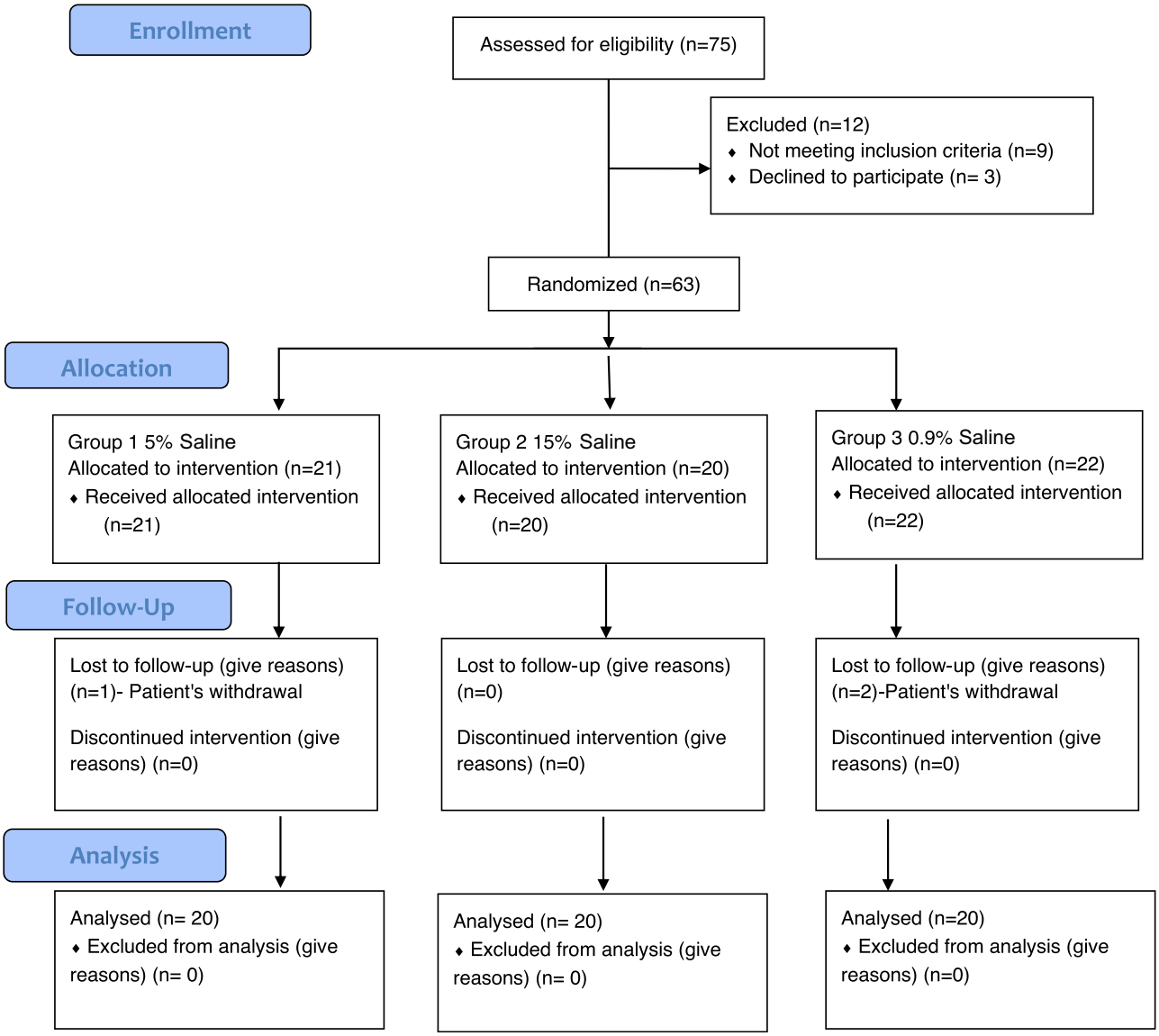

Fig 1 Consolidated Standards of Reporting Trials flow diagram.

Table 1 Demographic data comparison of the groups

		Group 1 5% Dextrose PrT (n=20)	Group 2 15% Dextrose PrT (n=20)	Group 3 0.9% Saline (n=20)	P
Age (y)		43±10.94	43.2±9.46	46.70±10.57	.451
Sex	Women	13 (65%)	13 (65%)	13 (65%)	>.999
	Men	7 (35%)	7 (35%)	7 (35%)	
Duration of symptoms (mo)		10.07±2.25	14.55±2.60	11.17±2.65	>.05
Dominant side	Right	20 (100%)	19 (95%)	20 (100%)	>.999
	Left	0	1(5%)	0	
Affected side	Right	13 (65%)	16 (80%)	17 (85%)	.298
	Left	7 (35%)	4 (20%)	3 (15%)	
Occupation	Housewife	9 (45%)	10 (50%)	8 (40%)	>.999
	Office worker	6 (30%)	1 (5%)	6 (30%)	
	Health professional	0	1 (5%)	0	
	Farmer	2 (10%)	1 (5%)	0	
	Laborer	3 (15%)	4 (20%)	4 (20%)	
	Cleaning staff	0	2 (10%)	2 (10%)	
	Other	0	1 (5%)	0	

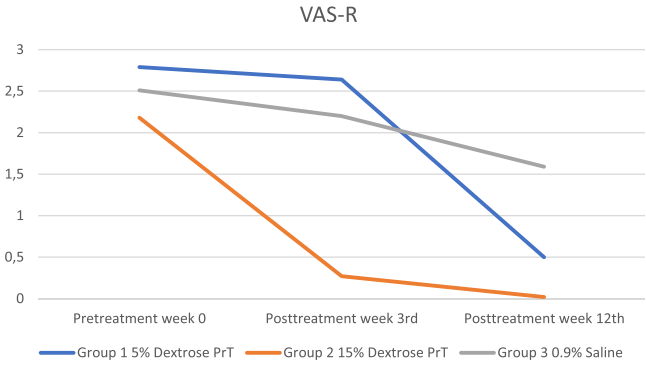

Fig 2 Comparison of VAS-R between the groups.

The main principle of PrT is the application of relatively low volumes of 0.5-6 ml of irritant solutions to painful ligament and tendon attachment areas.[14] In our study, 1 ml solution was preferred since the area is small. In the literature, hyperosmolar agents such as various concentrations of dextrose (such as 5, 10, 20, 25, 50%),[6,15,16] sodium morhuate,[16] polidocanol, glycerin, or phenol[17] are used as ingredients in PrT. Hypertonic dextrose is one of the most commonly used for proliferative therapy, and its low cost and safety is a reason for a preference.[17]

In a study by Scarpone et al, 0.72% sodium morhuate, 10.7% dextrose, 0.29% lidocaine, 0.04% a mixture of sensorcaine PrT solution and saline solution were compared. A significant decrease in pain and increase in handgrip strength were detected in the PrT group.[15]The study of Park et al found a significant decrease in VAS with 15% dextrose in lateral epicondylitis, and tendon healing findings were visualized with ultrasonography.[18]

Healing after tendinopathies, fasciopathies, and ligament injuries is achieved by collagen and scar tissue formation. However, until now, experts have not been able to agree on an effective treatment that can optimize the wound healing process.[19] Many injections have been tried to facilitate wound healing after fibrotic tissue injuries. PrT acts with inflammatory or non-inflammatory mechanisms depending on the dextrose concentration. Given that the average serum glucose concentration is approximately 100 mg/dL (about 0.1%), doses higher than 10% are considered hypertonic.[20] Hypertonic dextrose causes osmotic rupture of local cells and increases platelet-derived growth factors from these different types of human cells. Growth factors support type 1 and 3 collagen formation in tenocytes and repair in tendons, ligaments, and cartilages.[21] In a study, concentrations of 1%, 5%, 10%, 15%, 20%, and 25% dextrose were applied to human fibroblasts in vitro, and cell proliferation was evaluated. Up to 80% of fibroblast cell death detected at high doses (15%, 20%, and 25%), and it found to be around 20% at low doses (1%, 5%, and 10%). Also, vascular endothelial growth factor A gene expression analysis was found to be more increased at lower concentrations. The increased gene expressions were statistically significant and were correlated with the release of angiogenic factors.[22] As a result of these destructive inflammatory events that may develop after the injection in the area, side effects may be caused.

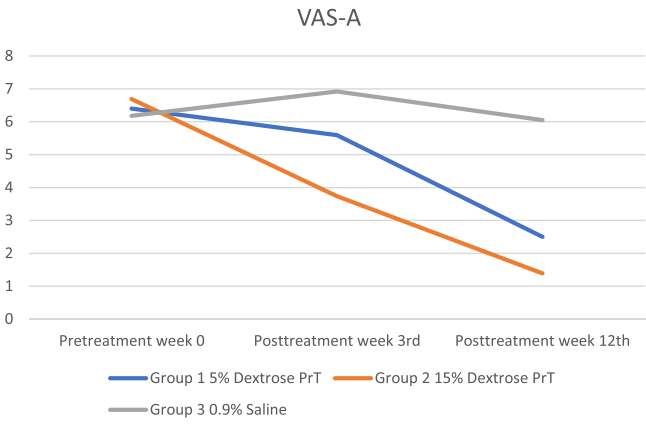

Fig 3 Comparison of VAS-A between the groups.

Dextrose solutions applied below 10% stimulate the proliferation of cells and tissues without causing a histologic inflammatory reaction and below 10% dextrose have been reported to be subinflammatory.[23] Many authors think that a 10% dextrose may cause enough stimulus to cause the release of growth factors, and this may meet the desired effect in proliferative therapy[24] and as a result of less inflammation the injections may be less painful and the recovery time shorter.[20]

Taking into account the difference in the inflammatory response of different concentrations, since it was an in vivo study, we could not measure the inflammatory response. Our study determined that rest and activity pain reduction started earlier (at week 3) in the 15% dextrose PrT group, and activity pain was decreased more in this group in the 3-month follow-up.[25] Despite having longer complaint period in Group 2 (even though there was not statistically difference than the other groups), we had better outcomes with 15% dextrose. However, a decrease in rest and activity pain increased handgrip strength, and improved functionality was observed with the non-inflammatory dose of 5% dextrose in the long term, although not in the short term. As far as we know, 5% dextrose PrT treatment was tried for the first time to treat chronic lateral epicondylitis.

Some studies support that the injection of dextrose around the peripheral nerve in some chronic pain patients may have an analgesic effect with a direct sensorineural effect.[26] In a study by Maniquis-Smigel et al, based on the hypothesis that 5% dextrose might have an analgesic effect, they administered an epidural injection with 5% dextrose or saline to participants with chronic low back pain. At the end of the study, a significant level of analgesic effect was obtained in the 5% dextrose group.[27] The onset of analgesia after epidural or subcutaneous injection suggests a potential direct effect of dextrose on peripheral nerves.[26]

PrT had been often used with the addition of local anesthetic[16] but in some clinical studies, it has been found that local anesthetics can inhibit the synthesis of collagen and antagonize the effect of PrT by affecting the wound healing mechanism.[28] In a study by Solmaz et al, 5% dextrose PrT was performed in chronic lumbar pain and a similar effect was obtained by avoiding the possible harmful effects of local anesthesia.[29] Therefore, our study did not use local anesthetic agents because of possible side effects.

There is no algorithm for PrT in the treatment of lateral epicondylitis, and the number of randomized controlled studies is insufficient. However, it is generally thought that 3-5 injections should be performed at 3 or 6 week intervals to achieve a lasting therapeutic effect. Therefore, PrT was performed at 3 times with 3 weeks intervals in this study.

It is thought that the needle tip used for injection may have an inflammatory effect with focal bleeding secondary to the traumatization effect, and this may cause healing that similar to the PrT mechanism of action.[30] In addition, according to the gate control theory, it is thought that as a result of the creation of a new pain

Table 2 Comparison of primary and secondary results within and between groups (X±SD)

	Group 1 5% Dextrose PrT (n=20)		Group 2 15% Dextrose PrT (n=20)		Group 3 0.9% Saline (n=20)		
	Mean ± SD	P_1	Mean ± SD	P_1	Mean ± SD	P_1	P
VAS-R (cm)							
Pretreatment week 0	2.79±1.05		2.18±1.66		2.51±1.91		.443§ .837‖ .789¶
Post-treatment week 3	2.64±1.58 (6%)	>.999*	0.27±0.58 (87%)	<0.001*	2.20±1.64 (%12)	.476*	<.001§ .565‖ <.001¶
Post-treatment week 12	0.5±0.94 (82%)	<.001† <.001‡	0.02±0.08 (99%)	<0.001† 0.199‡	1.59±1.44 (%36)	.201† .547‡	.289§ .003‖ <.001¶
VAS-A (cm)							
Pretreatment week 0	6.40±0.69		6.69±1.24		6.18±0.88		.603§ .754‖ .221¶
Post-treatment week 3	5.59±1.78 (%12)	.220*	3.74±1.65 (%44)	<0.001*	6.92±1.57 (+%11)	.124*	.033§ .038‖ <.001¶
Post-treatment week 12	2.50±1.08 (%60)	<.001† .001‡	1.39±1.10 (%79)	<0.001† <0.001‡	6.05±1.16 (%2)	>.999† .060‡	.007§ <.001‖ <.001¶
Handgrip strength (kg)							
Pretreatment week 0	40.50±17.61		58.50±40.20		44.75±26.38		.141§ .893‖ .312¶
Post-treatment week 3	51.25±17.23 (%26)	.001*	62.25±39.48 (%6)	0.418*	43.21±23.53 (-%4)	>.999*	.442§ .664‖ .094¶
Post-treatment week 12	59.50±18.70 (%46)	<.001† .001‡	71.50±38.04 (%22)	0.001† 0.005‡	42.50±20.22 (-%5)	.932† >.999‡	.348§ .126‖ .004¶
Pressure pain threshold							
Pretreatment week 0	3.50±1.50		4.80±2.52		3.50±1.76		.104§ >.999‖ .104¶
Post-treatment week 3	5.05±1.73	.003*	7.30±2.61	<0.001*	4.40±1.93	.067*	.004§ .601‖ <.001¶
Post-treatment week 12	7.60±1.98	<.001† <.001‡	9.80±2.91	<0.001† 0.001‡	5.30±2.12	<.001† .036‡	.013§ .009‖ <.001¶

(*continued on next page*)

Table 2 (*Continued*)

		Group 1 5% Dextrose PrT (n=20)		Group 2 15% Dextrose PrT (n=20)		Group 3 0.9% Saline (n=20)		
		Mean ± SD	P_1	Mean ± SD	P_1	Mean ± SD	P_1	P
Q-DASH Score								
Pretreatment week 0		64.08±5.29		55.45±15.64		59.99±14.05		.083§ .560‖ .489¶
Post-treatment week 3		36.98±13.51 (%42)	<.001*	28.97±18.58 (%47)	<0.001*	53.74±13.81 (%10)	.227*	.238§ .003‖ <.001¶
Post-treatment week 12		11.59±9.22 (%81)	<.001† <.001‡	9.45±7.35 (%82)	<0.001† <0.001‡	39.99±11.04 (%33)	<.001† <.001‡	.751§ <.001‖ <.001¶
DGAQ								
Post-treatment week 3	Near normal Significant	0		2 (%10)		0		.418§
	Slight	9 (%39)		12 (%52)		2 (%10)		<.001‖
	No change	10 (%50)		4 (%20)		6 (%30)		<.001¶
	Worsening	1 (%5)		2 (%10)		10 (%50)		
		0		0		2 (%10)		
Post-treatment week 12	Near normal Significant	13 (%65)		15 (%75)		0		.806§
	Slight	7 (%35)		5 (%25)		1 (%5)		<.001‖
	No change	0		0		12 (%60)		<.001¶
	Worsening	0		0		7 (%35)		
		0		0		2 (%10)		
P		<.001‡		<.001‡		.163‡		

* Ingroup comparison for weeks 0-3
† Ingroup comparison for weeks 0-12
‡ Ingroup comparison for weeks 3-12
§ Post hoc analysis for Groups 1 and 2
‖ Post hoc analysis for Groups 1-3
¶ Post hoc analysis for Groups 2 and 3

focus by injection, the original pain may be reduced as a result of suppression.[31] However, the effect was not significant in our study since there was no significant improvement in VAS-R and VAS-A pre and posttreatment in the saline group.

A meta-analysis evaluating the effect of saline injection on lateral epicondylitis found that the saline could be statistically and clinically effective on pain and function. However, in that study, it was thought that the effect could be its content and psychosocial factors called the placebo effect or unknown external factors.[32] Our study found that saline did not significantly affect on pain, handgrip strength and clinical improvement compared with other groups. It is thought that the significant decrease in Q-DASH scores between 0-12 and 3-12 in the saline group may be affected by the home exercise program given to each group can positively affect recovery.

Limitations of the study

The effect of traumatization by the needle cannot be quantified and may have contributed to inflammation caused by dextrose PrT. Since it was an in vivo study, inflammation between the groups could not be evaluated objectively. All patients participating in the study were given exercise therapy in the form of a home program and the exercise therapy may also contribute to the improvement seen in PrT groups, which could not be distinguished in the study.

Conclusions

In the chronic lateral epicondylitis, PrT is more effective in pain reduction, increasing handgrip strength, functionality, and clinical improvement than saline. There was no statistical difference in Q-DASH, DGAQ, side effects, and complications between the PrT groups. 15% dextrose PrT was more effective than 5% dextrose PrT in increasing handgrip strength and pressure pain threshold at week 12 and resting and activity pain at week 3. We recommend 15% dextrose PrT injections for chronic lateral epicondylitis based on this study. However, there is a need for studies comparing PrT doses and supporting long-term follow-ups.

Keywords

Lateral epicondylitis; Prolotherapy; Rehabilitation; Tendinopathy

Corresponding author

Yıldız Gonca Dogru Ciftci, MD, Department of Physical Medicine and Rehabilitation, Sisli Hamidiye Etfal Research Hospital, Istanbul, Turkey *E-mail address:* dryildizgonca@hotmail.com.

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