Clinical Trial Protocol
Iranian Registry of Clinical Trials

18 Sep 2026

Effect of topical nitric-zinc complex solution versus cryotherapy on the treatment of warts: a randomized clinical trial

Protocol summary

Study aim
To assess the effect of topical nitric-zinc complex solution versus cryotherapy on the treatment of warts

Design
This is a randomized clinical trial, in which 108 eligible patients will be randomly assigned to the intervention and control groups

Settings and conduct
The eligible patients with warts referring to the Sina Hospital in Hamadan city during the study period will be enrolled in the trial and will be randomly assigned to the intervention and control groups through the block randomization.

Participants/Inclusion and exclusion criteria
Inclusion criteria: Age of 7 to 80 years, Affected with warts, Exclusion criteria: Pregnancy or breastfeeding, Presence of wound, infection or active dermal disease at the site of treatment, Active coagulopathy, Presence of immune disorders, History of treatment of warts in the past two months, Cold intolerance, History of convulsion, History of cold urticaria

Intervention groups
Intervention group: Topical nitric-zinc complex solution 95% (manufactured by Hamadan School of Pharmacy) for a maximum of 20 seconds once every two weeks up to a maximum of four times Control group: Liquid nitrogen cryotherapy (manufactured by Pishidad Gas Industrial Group) for a maximum of 20 seconds once every two weeks up to a maximum of four times

Main outcome variables
Wart diameter

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20120215009014N395**
Registration date: **2021-05-14, 1400/02/24**
Registration timing: **prospective**

Last update: **2021-05-14, 1400/02/24**
Update count: **0**

Registration date
2021-05-14, 1400/02/24

Registrant information

Name
Jalal Poorolajal

Name of organization / entity
Department of Epidemiology & Biostatistics Hamadan University of Medical Sciences

Country
Iran (Islamic Republic of)

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+98 81 1838 0090

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2021-05-22, 1400/03/01

Expected recruitment end date
2021-10-23, 1400/08/01

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Effect of topical nitric-zinc complex solution versus cryotherapy on the treatment of warts: a randomized clinical trial

Public title

Effect of topical nitric-zinc complex solution versus cryotherapy on the treatment of warts

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Age of 7 to 80 years, Affected with warts,

Exclusion criteria:

Pregnancy or breastfeeding, Presence of wound, infection or active dermal disease at the site of treatment, Active coagulopathy, Presence of immune disorders, History of treatment of warts in the past two months, Cold intolerance, History of convulsion, History of cold urticaria

Age

From **7 years** old to **80 years** old

Gender

Both

Phase

3

Groups that have been masked

No information

Sample size

Target sample size: **108**

Randomization (investigator's opinion)

Randomized

Randomization description

The patients will be randomly assigned to intervention and control groups using block randomization. For this purpose, we will prepare four sheets of paper, writing on two sheets the name of the intervention and on the other two sheets the name of the control. The paper sheets will be pooled, placed in a container, and randomly drawn one at a time for each patient without replacement until all four sheets are drawn. The four paper sheets will be then placed back into the container, and this action repeated until the sample size is reached.

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committee of Hamadan University of Medical Sciences

Street address

Vice-chancellor for Research and Technology, Hamadan University of Medical Sciences, Shahid Fahmideh Ave

City

Hamadan

Province

Hamadan

Postal code

6517838695

Approval date

2021-05-01, 1400/02/11

Ethics committee reference number

IR.UMSHA.REC.1400.113

Health conditions studied

1

Description of health condition studied

Wart

ICD-10 code

B07

ICD-10 code description

Viral warts

Primary outcomes

1

Description

Measurement of wart diameter

Timepoint

Before intervention and one month after that

Method of measurement

With wart imaging

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Topical nitric-zinc complex solution 95% (manufactured by Hamadan School of Pharmacy) for a maximum of 20 seconds once every two weeks up to a maximum of four times

Category

Treatment - Drugs

2

Description

Control group: Liquid nitrogen cryotherapy (manufactured by Pishidad Gas Industrial Group) for a maximum of 20 seconds once every two weeks up to a maximum of four times

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center
Sina Hospital in Hamadan city

Full name of responsible person
Dr Sasan Dogohar

Street address
Sina Hospital, Mirzadeh Eshghi Ave.

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Hamedan University of Medical Sciences

Full name of responsible person
Dr. Saeid Bashirian

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Hamadan University of Medical Sciences, Shahid Fahmideh Ave

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Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?
Yes

Title of funding source
Hamedan University of Medical Sciences

Proportion provided by this source
100

Public or private sector
Public

Domestic or foreign origin
Domestic

Category of foreign source of funding
empty

Country of origin

Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact

Name of organization / entity
Hamedan University of Medical Sciences

Full name of responsible person
Dr Sasan Dogohar

Position
Resident of Dermatology

Latest degree
Medical doctor

Other areas of specialty/work
Dermatology

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Person responsible for scientific inquiries

Contact

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Dermatologist

Latest degree
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Other areas of specialty/work
Dermatology

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Person responsible for updating data

Contact

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Full name of responsible person
Dr. Jalal Poorolajal

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Undecided - It is not yet known if there will be a plan to make this available
Study Protocol
Undecided - It is not yet known if there will be a plan to make this available
Statistical Analysis Plan
Undecided - It is not yet known if there will be a plan to make this available
Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available
Clinical Study Report
Undecided - It is not yet known if there will be a plan to make this available
Analytic Code
Undecided - It is not yet known if there will be a plan to make this available
Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available