Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

Evaluating the effect of Radio frequency and Cavitation on Biochemical Markers and Body Contouring in Overweight People

Protocol summary

Summary

According to the World Health Organization definition, overweight & obesity are abnormal accumulation of more body fat mass that impair health. Overweight & obesity lead to detrimental metabolic effects on blood pressure, cholesterol, triglycerides & insulin resistance. Obesity especially visceral obesity leads to changes in inflammatory factors that originated from the alterations of cell function in adipose tissue & macrophages. Cellulite is one of the complications of obesity. Cellulite is a fibrous connective tissue. Today, there are devices that emit energy to subcutaneous fat layer of the skin selectively with a aim of improving cellulite and changes in body shape . The aim of this study is reduction of body size, improving lipid profile and inflammatory factors with the assistance of local slimming machine called Majic Pot & Megason. Majic Pot is advanced localized fat reduction system that we have used Radio frequency technology of this device in this project. Transmission of radio waves to adipose tissue stimulate Lipolysis & damaging fat cells. Its Temperature is 50-60 °C. These waves induce the transmission of electromagnetic waves to tissue, renew of old collagen, increase the production of new collagen by stimulating fibroblasts. Megason is another local slimming system that with the assistance of ultrasound tech at 30-70 KHz frequency range, create a negative pressure in the tissue, an increase in the size of fat cells & create vibrations destroy fat cells which are excreted through the lymphatic system.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2014042817475N1**
Registration date: **2014-06-09, 1393/03/19**
Registration timing: **registered_while_recruiting**
Last update:
Update count: **0**

Registration date

2014-06-09, 1393/03/19

Registrant information

Name
Mahsa Mohammadzadeh
Name of organization / entity
Mashhad University of Medical Science
Country
Iran (Islamic Republic of)
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Email address
mohammadzm913@mums.ac.ir

Recruitment status

Recruitment complete

Funding source

Mashhad University of Medical Sciences

Expected recruitment start date

2013-12-21, 1392/09/30

Expected recruitment end date

2014-06-21, 1393/03/31

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Evaluating the effect of Radio frequency and Cavitation on Biochemical Markers and Body Contouring in Overweight People

Public title

Evaluating the effect of Radio frequency and Cavitation on Biochemical Markers and Body Contouring in Overweight People

Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria: Overweight Women aged between 18 to 65 years; no use of certain drug like the drugs that Reduce sensitivity local steroid neuro drugs in the past six months; no medical history of Cardiovascular disease and Diabetes; not be pregnant and Breastfeeding; BMI between 25 to 30 kg/m2; Not having Cardiac pacemaker. Exclusion criteria: Pregnancy and Lactation; Age under 18 years or above 65 years; Male gender; Skin infection; Skin sensitivity to sunlight; use of topical steroids; Not being agree to continue working; People with type 1 and type 2 Diabetes; Systemic disease; not having weight reduction diet in the past three months; Having Cardiac pacemaker; BMI over 30 kg/m2 and less than 25 kg/m2
Age
From **18 years** old to **65 years** old
Gender
Female

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **50**
Randomization (investigator's opinion)
Randomized
Randomization description
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
Mashhad University of Medical Sciences
Street address
Ghoreishi building, daneshgah street, Mashhad, Razavi Khorasan state, Iran
City
Mashhad
Postal code
Approval date
2013-12-21, 1392/09/30
Ethics committee reference number
920584

Health conditions studied

1

Description of health condition studied
Localized adiposity
ICD-10 code
E65
ICD-10 code description
Localized adiposity

Primary outcomes

1

Description
Weight
Timepoint
Before starting intervention, during the intervention, at the end of period of intervention
Method of measurement
Tanita body composition analyzer

2

Description
Waist circumference
Timepoint
Before starting intervention, during the intervention, at the end of period of intervention
Method of measurement
Non elastic meter in terms of centimeter

3

Description
Abdominal circumference
Timepoint
Before starting intervention, during the intervention, at the end of period of intervention
Method of measurement
Non elastic meter in terms of centimeter

4

Description
Hip circumference
Timepoint
Before starting intervention, during the intervention, at the end of period of intervention
Method of measurement
Non elastic meter in terms of centimeter

5

Description
Waist to Hip circumference
Timepoint
Before starting intervention, during the intervention, at the end of period of intervention
Method of measurement
Non elastic meter in terms of centimeter

6

Description
Totall cholesterol
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Spectrophotometric

7

Description
Improvement of Cellulite
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Nurnberger- Muller score

8

Description
Blood pressure
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Sphygmomanometer

9

Description
LDL-C
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Spectrophotometric

10

Description
HDL-C
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Spectrophotometric

11

Description
TG
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Spectrophotometric

12

Description
Fasting Blood Sugar (FBS)
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Spectrophotometric

13

Description
Pro oxidant Antioxidant Balance
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Spectrophotometric

14

Description
Interleukin-1α
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Enzyme-Linked Immunosorbent Assay (ELISA)

15

Description
Interleukin-1β
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Enzyme-Linked Immunosorbent Assay (ELISA)

16

Description
Interleukin-2
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Enzyme-Linked Immunosorbent Assay (ELISA)

17

Description
Interleukin-4
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Enzyme-Linked Immunosorbent Assay (ELISA)

18

Description
Interleukin-6
Timepoint
Before starting intervention, at the end of period of intervention

Method of measurement
Enzyme-Linked Immunosorbent Assay (ELISA)

19

Description
Interleukin-10
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Enzyme-Linked Immunosorbent Assay (ELISA)

20

Description
Tumour Necrosis Factor Alpha
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Enzyme-Linked Immunosorbent Assay (ELISA)

21

Description
Interferon Gamma
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Enzyme-Linked Immunosorbent Assay (ELISA)

22

Description
Epidermal Growth Factor
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Enzyme-Linked Immunosorbent Assay (ELISA)

23

Description
Vascular Endothelial Growth Factor
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Enzyme-Linked Immunosorbent Assay (ELISA)

24

Description
Monocyte Chemoattractant Protein-1
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Enzyme-Linked Immunosorbent Assay (ELISA)

25

Description
Interleukin-8
Timepoint
Before starting intervention, at the end of period of intervention
Method of measurement
Enzyme-Linked Immunosorbent Assay (ELISA)

Secondary outcomes

empty

Intervention groups

1

Description
In the case group, working with local slimming machine for five weeks with two sessions per week (overally, 10 sessions that will have a working session with Majic Pot and a working session with Megason) Each session lasts 40 minutes. Diet to lose weight with 500 kilocalories reduction was given at the same time.
Category
Treatment - Devices

2

Description
A diet to lose weight with 500 kilocalories reduction in order to lose weight was given to the control group for five weeks.
Category
Lifestyle

Recruitment centers

1

Recruitment center
Name of recruitment center
Special clinic of Ghaem Hospital
Full name of responsible person
Street address
City
Mashhad

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Mashhad University of Medical Sciences
Full name of responsible person
Doctor Abdolreza Norouzy
Street address
Nutrition Department of Medical College, Vakilabad Blvd
City

Mashhad

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Mashhad University of Medical Sciences

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

empty

Person responsible for general inquiries

Contact

Name of organization / entity

Mashhad University of Medical Sciences

Full name of responsible person

Doctor Abdolreza Norouzy

Position

Assistant Professor

Other areas of specialty/work

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Nutrition Department of Medical College,Vakilabad Blvd

City

Mashhad

Postal code

Phone

+98 51 1800 2382

Fax

Email

norouzyA@mums.ac.ir

Web page address

Person responsible for scientific inquiries

Contact

Name of organization / entity

Mashhad University of Medical Sciences

Full name of responsible person

Doctor Abdolreza Norouzy

Position

Assistant Professor

Other areas of specialty/work

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Web page address

Person responsible for updating data

Contact

Name of organization / entity

Mashhad University of Medical Sciences

Full name of responsible person

Mahsa Mohammadzadeh

Position

Master of Science Student

Other areas of specialty/work

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+98 51 1882 7033

Fax

Email

Web page address

Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty