

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jul 2026

Survey on Effect of Methadone to Buprenorphine Shift in the Maintenance Treatment on Profile of Gonadal Hormones and Semen Analysis of Infertile Men

Protocol summary

Summary

Methadone and Buprenorphine have been used as opioid Substitution Treatment (OST) in the world since 40 & 18 years ago in order. Regardless of short period experience in the past, these treatments have 14 & 10 years history in Iran respectively. There is a lot of questions about unwanted side effects of these medications on structure & function of different organs of body which concerns clients & worries therapists. One of organs with most sensitivity about that, is Genital system and common questions of mostly young clients on maintenance treatments, especially those who tend to have child in the future, is about probable effects of methadone & buprenorphine on sperm & fertility. Accurate & scientific answer to this question and select of appropriate medication for each client, diminishes their concerns and increases therapeutic alliance. According to high prevalence & morbidity of opioid use disorder especially in young & middle-aged men, and widespread providing of OST with methadone & buprenorphine, we decided to substitute methadone by buprenorphine in men who receive OST and survey the effect of this shift on sexual hormones & sperm analysis. The study will be done on 40 participants from Rouyan institute who their infertility has been established and in the routine diagnostic procedures, there was not any finding except methadone consumption as an opioid substitution treatment. Primary routine laboratory tests (including TT, FT, LH, FSH, SHBG, PL, Semen Analysis) will done in the Rouyan Institute and after filling of inclusion criteria, clients will be refer to an experienced clinic in prescription of buprenorphine with appropriate access for continuing of study. Inclusion criteria: 1) men between 18 to 50 y/o; 2) at least 6 months on Opioid Substitution Treatment & 3 months from last illegal opioid use; 3) daily Methadone dose less than 60 mg/d; 4) certification of therapist physician on stability & readiness of client for shifting

from methadone to buprenorphine; 5) diagnosis of methadone as the most important factor for undesirable hormonal & seminal analysis; 6) written & signed informed consent form. The participants will stay on 2 groups randomly. In the study group methadone will be substituted with buprenorphine and in the control group methadone will be continued. In both groups laboratory test including sex hormones (TT, FT, LH, FSH, SHBG, PL) and semen analysis will be done 3 times: before intervention, 3 months & 6 months after beginning of intervention. Exclusion criteria: 1) evidence or signs of laps & relapse in buprenorphine treatment even with appropriate dose; 2) absence from treatment more than 2 consecutive or 3 undulant weeks; 3) absence from screening opioid urine test more than 2 consecutive or 3 undulant sessions; 4) absence from hormonal & seminal analysis more than 2 weeks after appointed time; 5) intolerance of methadone dose reduction for shifting to buprenorphine; 6) intolerance of buprenorphine side effects.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2016011626040N1**
Registration date: **2016-04-26, 1395/02/07**
Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2016-04-26, 1395/02/07

Registrant information

Name

Maryam Farahmandfar

Name of organization / entity

Tehran University of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 21 8899 1118

Email address

mfarahmandfar@sina.tums.ac.ir

Recruitment status

Recruitment complete

Funding source

Tehran University of Medical Sciences

Expected recruitment start date

2016-04-03, 1395/01/15

Expected recruitment end date

2017-04-04, 1396/01/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Survey on Effect of Methadone to Buprenorphine Shift in the Maintenance Treatment on Profile of Gonadal Hormones and Semen Analysis of Infertile Men

Public title

Effect of Substitution of Methadone by Buprenorphine on Gonadal Hormones and Semen

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: men between 18 to 50 y/o; at least 6 months on Opioid Substitution Treatment & 3 months from last illegal opioid use; daily Methadone dose less than 60 mg/d; certification of therapist physician on stability & readiness of client for shifting from methadone to buprenorphine; diagnosis of methadone as the most important factor for undesirable hormonal & seminal analysis; written & signed informed consent form. Exclusion criteria: evidence or signs of laps & relapse in buprenorphine treatment even with appropriate dose; absence from treatment more than 2 consecutive or 3 undulant weeks; absence from screening opioid urine test more than 2 consecutive or 3 undulant sessions; absence from hormonal & seminal analysis more than 2 weeks after appointed time; intolerance of methadone dose reduction for shifting to buprenorphine; intolerance of buprenorphine side effects.

Age

From **18 years** old to **50 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **40**

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**

Tehran University of Medical Sciences

Street address

Secretariat of Ethics Committee, Sixth Floor, Tehran University of Medical Sciences, Qhods St. Keshavarz Blvd.

City

Tehran

Postal code**Approval date**

2015-11-16, 1394/08/25

Ethics committee reference number

IR.TUMS.REC.1394.1172

Health conditions studied**1****Description of health condition studied**

Male infertility in opioid substitution treatment

ICD-10 code

N46

ICD-10 code description

Male infertility

Primary outcomes**1****Description**

Follicle-stimulating hormone (FSH) blood level

Timepoint

Before intervention, 3 months after beginning of intervention, 6 months after beginning of intervention

Method of measurement

mIU/ml (ELISA)

2**Description**

Luteinizing hormone (LH) blood level

Timepoint

Before intervention, 3 months after beginning of intervention, 6 months after beginning of intervention

Method of measurement

IU/L (ELISA)

3**Description**

Free Testosterone (FT) blood level

Timepoint

Before intervention, 3 months after beginning of intervention, 6 months after beginning of intervention

Method of measurement

pg/ml (ELISA)

4**Description**

Total Testosterone (TT) blood level

Timepoint

Before intervention, 3 months after beginning of intervention, 6 months after beginning of intervention

Method of measurement

ng/ml (ELISA)

5**Description**

Prolactin (PRL) blood level

Timepoint

Before intervention, 3 months after beginning of intervention, 6 months after beginning of intervention

Method of measurement

ng/ml (ELISA)

6**Description**

Sex Hormone Binding Globulin (SHBG) blood level

Timepoint

Before intervention, 3 months after beginning of intervention, 6 months after beginning of intervention

Method of measurement

nmol/l (ELISA)

7**Description**

Semen Volume

Timepoint

Before intervention, 3 months after beginning of intervention, 6 months after beginning of intervention

Method of measurement

ml

8**Description**

Level of PH of semen

Timepoint

Before intervention, 3 months after beginning of intervention, 6 months after beginning of intervention

Method of measurement

Ph Scale

9**Description**

Number of spermatozoid in 1 ml of semen

Timepoint

Before intervention, 3 months after beginning of intervention, 6 months after beginning of intervention

Method of measurement

Million/ml

10**Description**

Time for fluidity of semen

Timepoint

Before intervention, 3 months after beginning of intervention, 6 months after beginning of intervention

Method of measurement

minute

11**Description**

Shape of spermatozoides

Timepoint

Before intervention, 3 months after beginning of intervention, 6 months after beginning of intervention

Method of measurement

Percentage of spermatozoides with normal shape

12**Description**

Normal motility of spermatozoides

Timepoint

Before intervention, 3 months after beginning of intervention, 6 months after beginning of intervention

Method of measurement

Percentage of spermatozoides with normal forward motion

Secondary outcomes**1****Description**

Daily methadone dose

Timepoint

Before substitution by buprenorphine

Method of measurement

mg/d

2**Description**

Daily buprenorphine dose

Timepoint

After substitution of methadone

Method of measurement

mg/d

Intervention groups

1

Description

According to a randomized categorization, participants will be classified in 2 groups that will be informed. In the intervention group methadone will be substitute with buprenorphine, and maintenance treatment will continue for 6 months. Prescribed medication in the study group is buprenorphine hydrochloride (2 mg SL tablet) manufactured by Faranchimie, 8-16 mg/day, single dose for 6 months. Sampling for laboratory tests (5 cc blood for sex hormones and Seminal fluid volume in 1 ejaculation for semen analysis) will be taken 3 times: before intervention, 3 months, & 6 months after beginning of intervention. Opioid screening test will be done (by taking urine sample 10 cc) every month.

Category

Treatment - Drugs

2

Description

In the control group methadone will be continued as maintenance treatment for 6 months. prescribed medication in the control group is 5 mg methadone hydrochloride tablet, 40-60 mg/day, single dose, for 6 months. Sampling for laboratory tests (5 cc blood for sex hormones and Seminal fluid volume in 1 ejaculation for semen analysis) will be taken 3 times: before intervention, 3 months, & 6 months after beginning of intervention. Opioid screening test will be done (by taking urine sample 10 cc) every month.

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center

Iranian National Center for Addiction Studies

Full name of responsible person

Mohammad Reza Haddadi

Street address

No. 669, Qazvin Square, Sout Kargar Avenue

City

Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Tehran University of Medical Sciences

Full name of responsible person

Nasim Vosoughi, Ph.D

Street address

No. 88, School of Advanced Technologies in Medicine,

Italia st. , Keshavarz Blvd.

City

Tehran

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Tehran 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

Iranian National Center for Addiction Studies

Full name of responsible person

Mohammad Reza Haddadi

Position

Medical Degree/ Director of Buprenorphine Clinic

Other areas of specialty/work

Street address

No. 669, Qazvin Square, South Kargar Avenue

City

Tehran

Postal code

1336616357

Phone

+98 21 5542 3728

Fax

+98 21 5547 2232

Email

incas@tums.ac.ir

Web page address

<http://incas.tums.ac.ir>

Person responsible for scientific inquiries

Contact

Name of organization / entity

Tehran University of Medical Sciences

Full name of responsible person

Maryam Farahmandfar

Position

Ph.D in Physiology

Other areas of specialty/work

Street address

No.88, Italia Ave., Qods St., Keshavarz Blvd., School of Advanced Technologies in Medicine

City

Tehran
Postal code
1417755469
Phone
+98 21 4305 2000
Fax
+98 21 8899 1117
Email
education-satim @tums.ac.ir
Web page address
<http://satim.tums.ac.ir/>

Person responsible for updating data

Contact

Name of organization / entity
Iranian National Center for Addiction Studies
Full name of responsible person
Mohammad Reza Haddadi
Position
Medical Degree/ Director of Buprenorphine clinic
Other areas of specialty/work
Street address
No.669, Qazvin square, South Kargar Avenue
City
Tehran

Postal code
1336616357
Phone
+98 21 5542 3728
Fax
+98 21 5541 2232
Email
incas@tums.ac.ir
Web page address
<http://incas.tums.ac.ir/>

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