Prophylactic effect of music therapy on episodic migraine patients under the care of chronic pain department

MusicMig

STATISTICAL ANALYSIS PLAN

Version n°1.0 dated of 15/11/2018

Administrator:

University Hospital Center (CHU)
Site of GHSR
97 448 Saint Pierre cedex
Site du CHFG
97 405 Saint Denis Cedex

Research responsible:

Dr Emmanuelle De Diego
Chronic Pain Department CHU-GHSR Site Saint Louis
BP350 97448 saint Pierre Cedex
Tel.: *02 62 91 20 37* - Fax: *02 62 91 20 31*
Email: *emmanuelle.dediego@chu-reunion.fr*

Methodology and Data Management Centre:

Methodological support unit
CHU The Reunion
Site de Bellepierre
Allée Topaze
97400 Saint-Denis
Tel.: *02 62 90 62 83* - Fax: *02 62 90 69 21*
Email: *usm@chu-reunion.fr*

SIGNATURE OF THE STATISTICAL ANALYSIS PLAN

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Chronic Pain Department CHU-GHSR Site Saint Louis
BP350 97448 saint Pierre Cedex
Tel.: *02 62 91 20 37* - Fax: *02 62 91 20 31*
Email: *emmanuelle.dediego@chu-reunion.fr*

From Saint Louis

Date *: 15/11/2018*
Dr Emmanuelle De Diego

Signature

SOMMAIRE

1. STUDY SYNOPSIS

Music therapy has been validated in the management of chronic pain and anxiety disorders. A program of music therapy will be proposed by the CHU Chronic Pain department team from GHSR. The objective of this study is to evaluate the effect of the music in the migraine specific indication.

This study has been designed as a before-after study without control group. It comprises of only one group of patients and all of them will receive the intervention.

The study will measure and compare migraine frequency during the month before inclusion with migraine frequency 3 months after the inclusion.

Intervention being realized under current practice, it was not possible to propose a randomized trial with one arm is treated with music therapy and another one not.

The month before inclusion will serve as reference. Effect of music therapy will be evaluated during 3 months after inclusion, using a period of same duration of the reference one and using the same tools. During the 3 months, patients will be followed every month during a visit realized at Chronic Pain Department of GHSR in order to evaluate if the patient is compliant in completion of migraine diary, uses correctly Music Care and if he is compliant with his program. During the visit, migraine evaluation will be evaluated.

2. OBJECTIVES

2.1. PRIMARY OBJECTIVE

To evaluate the effect of music therapy on migraine frequency, on patients suffering from episodic migraines and followed in chronic pain department of the CHU Sud Reunion.

2.2. SECONDARY OBJECTIVES

- To evaluate the effect of music therapy on migraine intensity, duration, and acute treatment administration.
- To evaluate the effect of music therapy on emotional effect (HAD score) and functional impact (HIT-6 score).

3. EVALUATION CRITERIA

Primary and secondary endpoints are defined according to the last recommendations related to the evaluation of prophylactic migraine treatment of ANAES October 2002: « Treatment is considered as efficient if crisis frequency is reduced of at least 50 %. It is also important to consider the reduction of medication consumption, intensity and duration of crisis. Evaluation is done after 3 months. ». The methodology is consistent with guidelines of International Headache Society for clinical research on migraine.

3.1. PRIMARY ENDPOINT

Reduction of migraine crisis frequency of at least 50% after 3 months of treatment.

The studied variable is the monthly frequency of migraine crisis. Data collection is done using a migraine agenda (annex 1 of protocol), starting the month before inclusion and music therapy initiation. This agenda should then be completed usually during study period under music therapy. During each monthly visit, a control will be done by the intern of general medicine associated to the study.

The primary endpoint is obtained using the difference between mean crisis frequency during the month before music therapy initiation and the one obtained during the 3rd month of treatment.
A reduction of at least 50% at month 3 is considered as music therapy efficacy on episodic migraine prevention.

3.2. SECONDARY ENDPOINTS

- **Reduction of crisis intensity and duration, as well as medication consumption.**
Crisis intensity (mild, moderate, severe), duration in hour, and the number of treatments taken are collected in the migraine agenda (annex 1 of protocol) filled by the patient. These variables will be compared between the month before music therapy initiation and the 3rd month of treatment.

- **Reduction of functional and emotional impact**.
Questionnaires HAD and HIT (annex 2 of protocol) will be completed with the investigator during the inclusion visit before initiation of music therapy, and at Month 3 visit.
- Questionnaire HAD to evaluate emotional impact (national reference HAS « chronic pain: recognize chronic pain syndrome, evaluate it and guide the patient »)
- Questionnaire HIT to evaluate functional impact (guideline of the International Headache society)

4. STUDY POPULATION

Intent-to-treat (ITT) Population: all the patients with at least on music session and suffisant completion of migraine diary to have evaluation at Month 3 of the primary endpoint.

5. STATISTICAL METHODS

5.1. SAMPLE SIZE CALCULATION

Primary endpoint is the reduction on migraine crisis frequency before and after music therapy.
In the population of patients corresponding to inclusion criteria, mean number of migraine crisis per month can be estimated to 8 (standard deviation = 4) before intervention.
A reduction clinically significant would be a reduction of at least 50% of mean monthly number of migraine crisis after 3 months of care.
Under these conditions, 20 patients are needed to have this difference of 50% with a statistical power of 90% and an alpha equal to 5%.

5.2. STATISTICAL METHODS USED

All the tests will be realized with SAS 9.2 software with α =5%.

Baseline characteristics

Baseline characteristics will be summarized. Qualitative variables will be described using number of patients, percentage and 95% confidence interval (IC95%). Quantitative variables will be described as number of patients, mean, standard deviation, confidence interval of the mean, median, Q1, Q3, minimum and maximum.

Analysis of primary endpoint

Monthly mean number of migraine crisis before music therapy will be compared to the one obtained at Month 3 using Wilcoxon signed rank test for paired (dependent samples). The analysis will be performed in intent-to-treat.

Analysis of secondary endpoints

Quantitative variables measured before music therapy will be compared with the ones collected after music therapy using the same statistical method as for primary endpoint.
Qualitative variables (proportions) measured before music therapy will be compared with the ones collected after music therapy using McNemar Chi² test.