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Seismotherapy at the University Hospital in Marrakech

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Abstract: Seismotherapy consists of causing a generalized epileptic crisis by means of an electric current with transcranial administration. (T. Charpeaud, 2016) This therapeutic method is currently undergoing a new remedy in several countries. In our Context as a mental health staff in the city of Marrakech, we found the great inadequacy of The prescription of seismotherapy in the common practice at the level of all psychiatric care Structures Objective of the study: To establish the activity assessment in seismotherapy at the University hospital Ibn Nafis of Marrakech. Methodology: This is a retrospective descriptive study of 21 patients (17 men and 4 women) Who received 264 seismotherapy sessions between 2012 and 2022. We used an operating Sheet to collect information through the traceability register at the seismotherapy room. Results: The two main diagnoses of treated patients were schizophrenic disorders in 55% of Cases, and thymic disorders in a proportion of 28%. these sessions involved 81% of Hospitalized patients. The anesthetic was propofol for all patients. The intensity of the Charge was in the majority of the 800 mA sessions. We found that despite an inadequacy in the conditions of the practice of these sessions, including the absence of the use of the «curare» and the lack of a recovery room, favourable short-term developments in all cases. Conclusion: Seismotherapy consists in causing a generalized comitiale crisis by means of an Electric current with transcranial administration. Our results indicate that the practice of seismotherapy at the Ibn Nafis CHU does not meet international standards and remains Poorly adapted. We found a positive evolution in the short term out of the 264 sessions Conducted. However, efforts must be made to make the staff aware of this therapeutic Process in other indications aimed at both curative and preventive.

Keywords: Seismotherapy, Propofol, Electric Current

1. Introduction

Seismotherapy is a proven treatment in psychiatric pathology. It's an alternative in case Failure or intolerance to medical treatment. It may also be proposed as a matter of urgency Short-term life risk (suicidal ideation, undernutrition). Performed under brief anesthesia General and curarisation, it consists in causing a generalized comitiale crisis, several sessions Being necessary [1, 2]. Its contraindications are those of general anaesthesia and Intracranial hypertension [3, 4]. Despite the short duration of the session, it requires anesthesia General and curarisation and the awakening phase requires surveillance [5]. In the treatment of schizophrenia. It should be noted that seismotherapy is widely used in Some developing countries and a renewed interest in the treatment of Schizophrenia is observed because 20% of patients do not respond to antipsychotics [6, 7, 8].

The disadvantages of seismotherapy are related to the risks of general anaesthesia such as allergy Some products and cardiovascular complications. However the properties Pharmacologics of propofol and etomidate precisely meet the requirements of this Anesthesia [9] A great many articles have shown the efforts made to improve the technique, to identify Indications, reduce side effects and try to give scientific status to practices And to medical expression [10, 11]. However, the lack of consensus on the mechanism of action of Seismotherapy, like antidepressants, must push us to get more Informed consent of the patient, especially since this treatment considered last chance has Always an effect of fear and anguish [11].

In our context as a mental health staff in the city of

Marrakech, we have found the great inadequacy of seismotherapy prescription in common practice at the level of all psychiatric care structures, or the total absence since the only service that contains a room for seismotherapy is that of Chu Mohammed VI. It remains to be noted that the conditions of practice are unsuitable and intersect old descriptions.

With this in mind, the objective of this study was to establish an activity assessment at the seismotherapy room at the Ibn Nafis university hospital in Marrakech. We were able to identify the inadequacies in personnel and techniques and the role that this therapeutic method could play in raising awareness among all staff.

2. Material and Method

We conducted a retrospective and quantitative descriptive study to Take stock of the seismotherapy practice at the CHU Ibn Nafis de Marrakech. This study involved all patients who received at least one Seismotherapy session during the period between 2012 and 2022, N=21. We performed a Farm Return that was completed by two psychiatrists from the registry data belonging to the Ibn Nafis Hospital, an interview was also conducted with a Resident doctor who takes office at the seismotherapy room. The data Collected were analyzed and processed by Excel (2007) and Word (2007).

3. Results

Our study involved 21 patients who received a total of 264 sessions.

3.1. Data Patient

3.1.1. Distribution of Patients by Sex

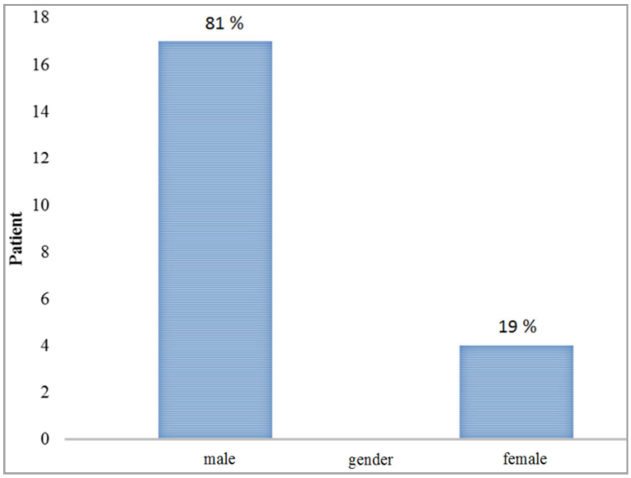

Figure 1. *Gender Distribution of Patients.*

Male predominated with 81% of the overall target population.

3.1.2. Age Distribution of Patients

The majority of patients were between 18 and 40 years of age with 67% frequency.

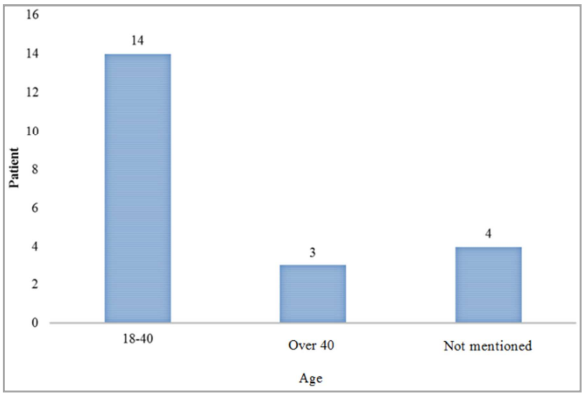

Figure 2. *Patient Age Distribution.*

3.1.3. Distribution of Patients by History

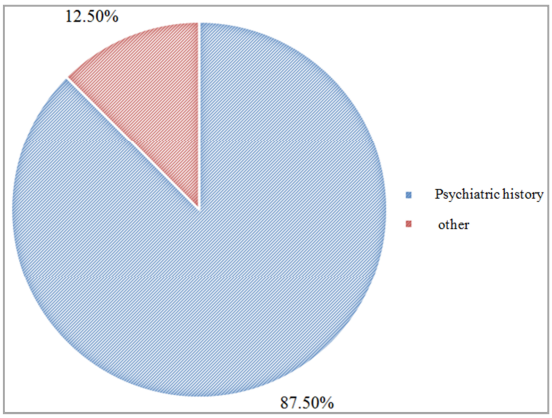

Figure 3. *Distribution of Patients by History.*

Only 12.5% of patients who received seismotherapy had a somatic history in addition to their psychiatric pathology.

3.1.4. Distribution of Patients by Diagnosis

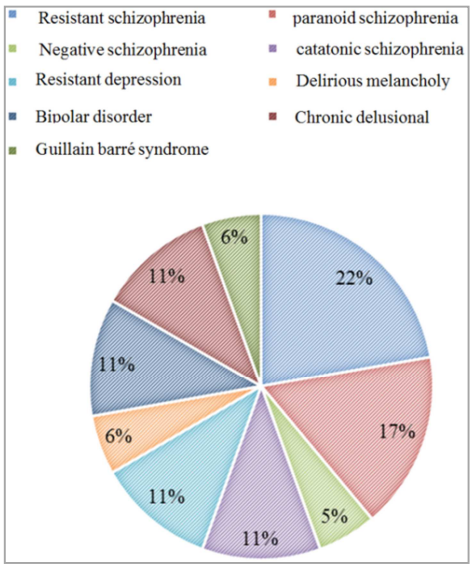

Figure 4. *Distribution of Patients by Diagnosis.*

55% of diagnoses were schizophrenic and 28% of diagnoses were mood disorders.

3.1.5. Distribution of Patients According to Seismotherapy Indication

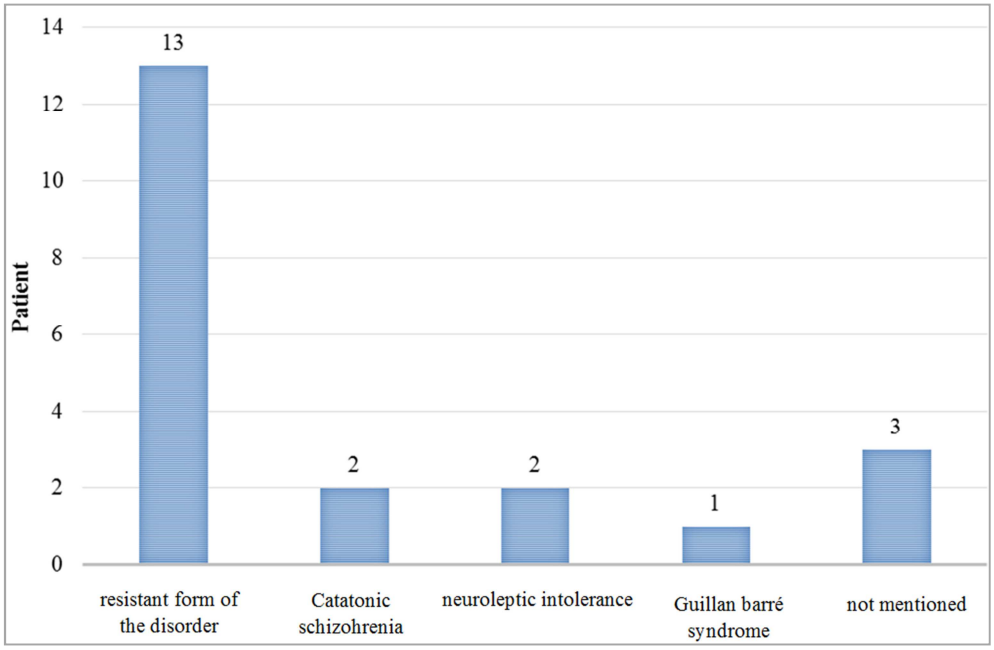

Figure 5. *Distribution of patients according to indications.*

61.9% of indications were resistant forms of the disease.

3.1.6. Distribution of Patients by Origin

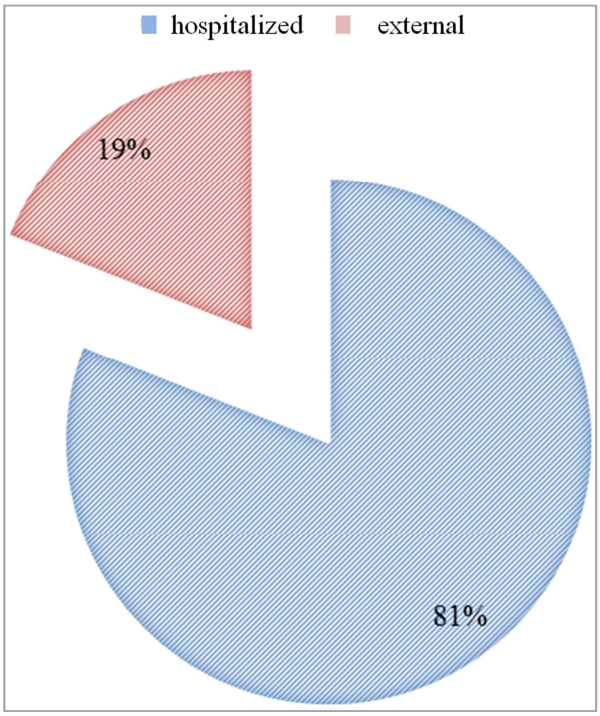

Figure 6. *Distribution of Patients by Origin.*

81% of patients were admitted to the ward.

3.1.7. Distribution by Patient Consent

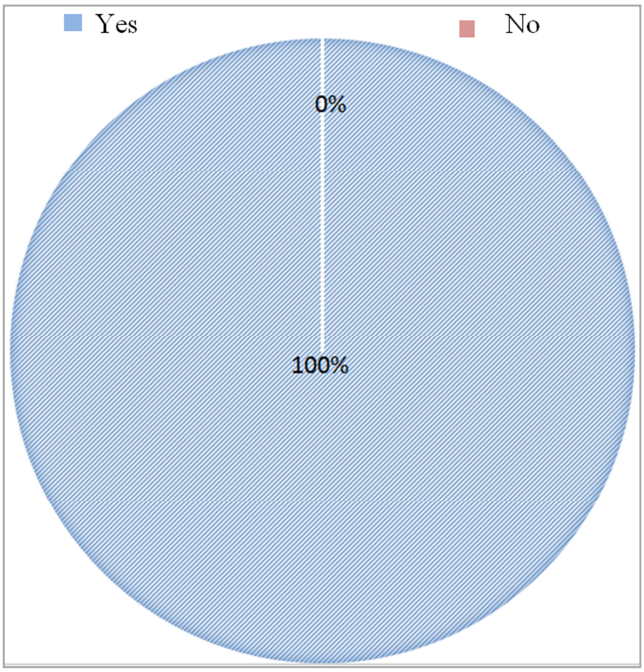

Figure 7. *Distribution of Patients by Consent.*

All patients who received seismotherapy consented.

3.2. Data Concerning the Realisation of the Sessions

3.2.1. Distribution of Patients by Anesthetic Dose

62.5% of patients reported on the registry received a dose of less than150mg propofol.

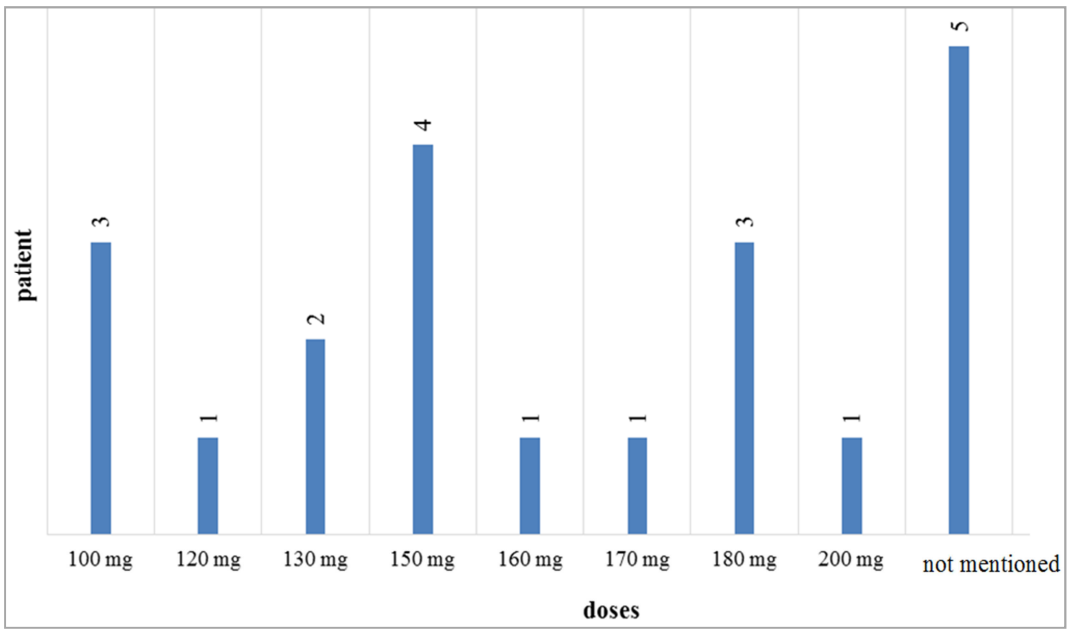

Figure 8. *Distribution of Patients by Anesthetic Dose.*

3.2.2. Distribution of Patients According to the Nature of Hypnotics

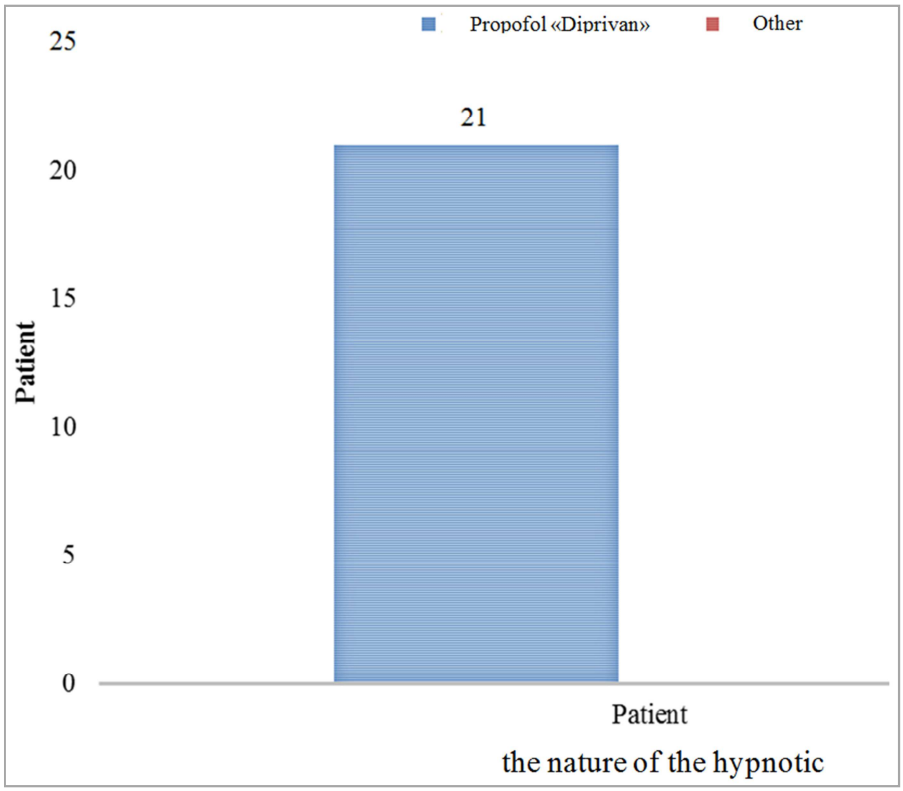

Figure 9. *Distribution of Patients by Nature of Hypnotics.*

All patients received the same Propofol anesthetic.

3.2.3. Distribution of Patients According to the Pre-Eanesthetic Consultation

All patients received a pre-anesthetic consultation.

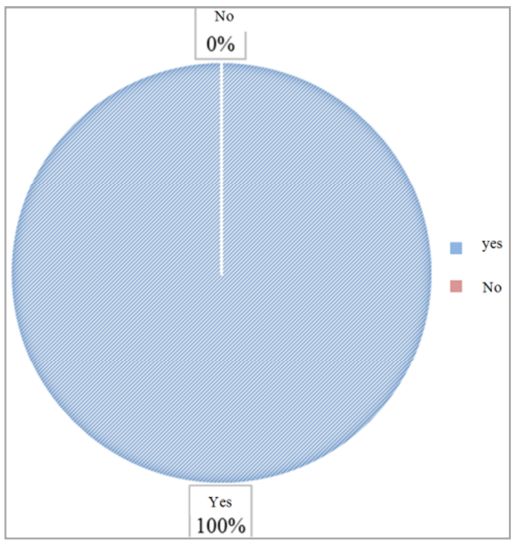

Figure 10. *Distribution of Patients by Pre-anesthetic Consultation.*

3.2.4. The Presence of a Patient Recoveryroom

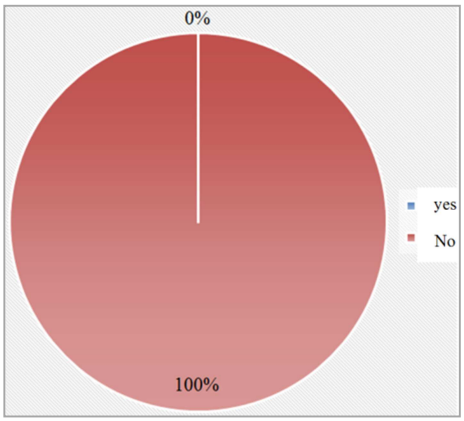

Figure 11. *Presence of a patient recoveryroom.*

There was no wake-up room near the seismic patients.

3.2.5. Distribution of Patients by Electrical Load Intensity

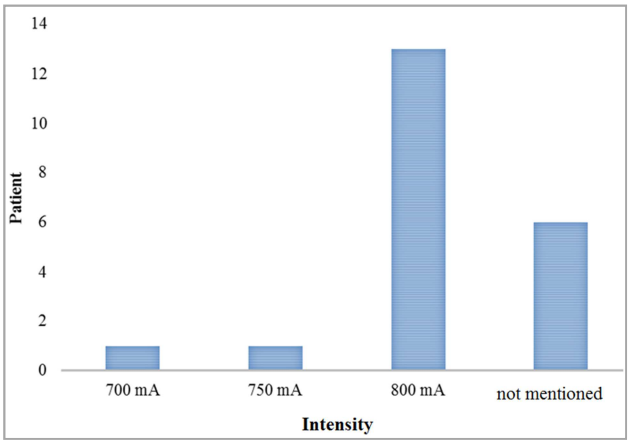

Figure 12. *Intensity Distribution of Patients.*

86.6% of patients whose dose was mentioned had received 800mA.

3.2.6. Staf f Training in the Use of Seismothere

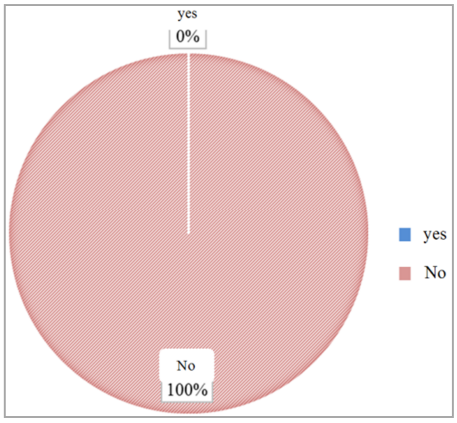

Figure 13. *Staff training in the use of seismothere.*

All personnel were not trained in the use of seismothere

3.2.7. Presence of ECG and EEG Recording During the Session

Not all patients had ECG and EEG recordings during the session.

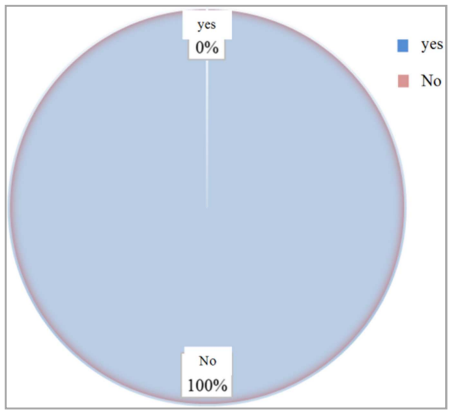

Figure 14. *Presence of ECG and EEG recording during the session.*

3.2.8. Short-Term Seismotherapy Progression Distribution of Patients

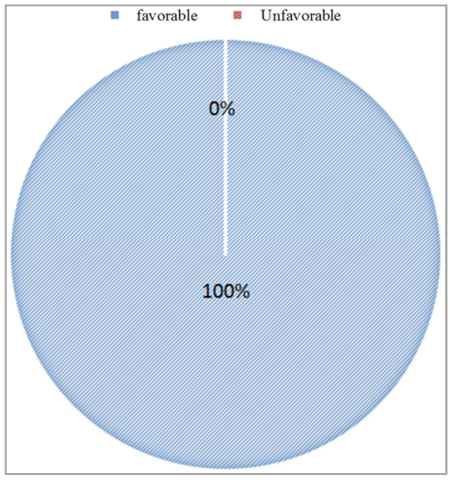

Figure 15. *Distribution of Patients by Short-Term Seismotherapy Progression.*

All patients treated had a favourable development in the short term.

3.2.9. Distribution of Patients by Maintenance Seismotherapy

95.23% of patients did not have maintenance sessions.

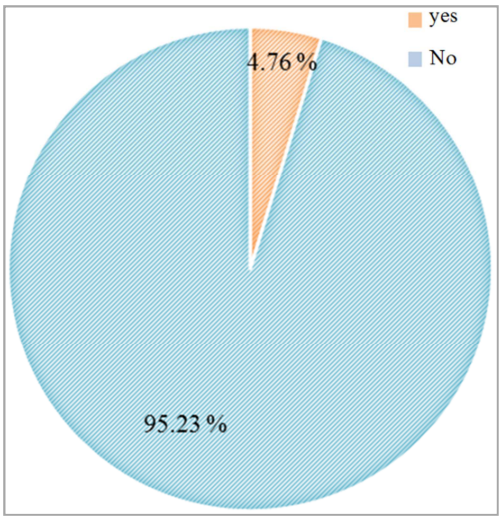

Figure 16. *Distribution of patients by maintenance seismotherapy.*

3.2.10. Distribution of Patients by Use of Curare

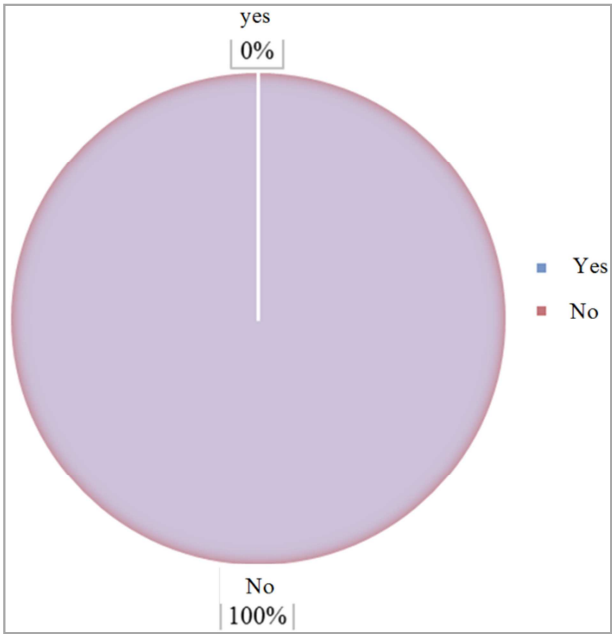

Figure 17. *Distribution of Patients by Curare use.*

We found that not all patients had received curare.

4. Discussion

We carried out a descriptive study to establish the activity balance of the Seismotherapy at the Ibn Nafis hospital inMarrakech between 2012 and 2022.

Patients treated were 21 patients. This study revealed that the majority of Patients treated were between 18 and 40 years old, which is similar to a Tunisian study Where patients were between 20 and 50 years [12]. On the other hand in another Study done in Sweden, seismotherapy was preferred for subjects over 50 Ans [13]. The age group of the population in our study is explained by the fact that the University psychiatric hospital does not admit patients beyond 60 years of age or Under 18 years old. With respect to the sex of seismotherapy patients, there was a male predominance in our population. This result is similar to that of a study in Asia on the practice of seismotherapy, 62% are men [14], However a clear female preponderance 63.4% was reported in another study conducted in Australia [15].

Our study also showed that 87.5% of treated patients had only Psychiatric history and no organic history, this is due to the selection of Patients avoiding electric shocks, in fragile patients, all the more More than the available means are insufficient. however in the study [12], about 37.5% Patients had one or two somatic pathologies, mainly the Diabetes, hypothyroidism and high blood pressure. In our sample, sessions involved patients with schizophrenic disorders in 55% of cases and thymic disorders in 28% of cases, while in 61.9% of patients the disorder was resistant. Indeed 81% of patients were hospitalized which explains the frequency of schizophrenia and the thymic disorders which are according to us the first cause of passage to the emergency department of the hospital Ibn Nafis. These results are consistent with those found in a study in Nigeria [16] with 60.3% for resistant forms of schizophrenia and 31.5% for thymic forms. Seismotherapy has an exceptional and favorable performance in schizophrenic forms, resulting in rapid relief [17]. Yet in another study in Turkey [18], unipolar major depressive disorder was the most common pathology in patients treated with seismotherapy at 42.3%.

All patients gave consent, joining the majority of studies [12, 13] and adhering to the principles listed in the publication on ethical principles of seismotherapy [11].

With respect to the nature of the anesthetic product and dose, general anesthesia was systematic during sessions. Propofol “Diprivan” was the only anesthetic product administered in our study at doses between 100 and 200 mg, with most doses below 150 mg. In our opinion, this still explains the care team’s precautions to overcome the shortcomings of the service, particularly the lack of a recovery room dedicated to nearby patients. Our study was similar to that in French HUCs [19], Propofol was the most commonly used hypnotic 82%. Thus, one study confirmed that Propofol allows a softer induction of anesthesia than other anesthetic products and reduces the hypertensive response [20]. In contrast, study [21] showed that Methohexital is the most commonly used general anesthetic.

In some countries in Asia, Thiopental is used as the first choice in 79.2% of cases [14]. Most patients were treated with 800 mA or 61.9% of all patients listed in the register. The load intensity in our study is similar to that in a study in the USA [22].

With respect to staff training on the use of seismothere, in

our case, not all of them have an academic training in the manipulation of the latter except for personal efforts by reading the guide associated with the device or searching for instructions on the internet, One could therefore assume that this had an impact on the number of patients recruited, which did not exceed during the period 2012-2022 a total of 21 patients, the latter is small compared to a study in Turkey [18] where the number of patients treated between 2007 and 2013 was estimated at 111 patients.

All patients treated had a perfect evolution in the short term, in contrast in the study [12], 51.2% of patients had immediate adverse effects, these were cardiovascular «bradycardia» and respiratory complications "respiratory depression" which is considered the primary immediate risk associated with the administration of seismotherapy. This difference, which seems in our favor in terms of short-term evolution, is related to patient selection, low dose administration and a safe product, however, in our study we were not able to verify the quality of induced seizures and their effectiveness, especially since this compensation of complications is associated with a lack of use of «curare», this reality leaves more questions about the conduct of the sessions, but opens the reflection on the necessity of other studies with a large sample to conclude to the low risk of seismotherapy especially on a population that has very little somatic history like that of our study.

Maintenance seismotherapy is used to significantly improve psychiatric symptoms and overall patient functioning with a reduction in the number of hospital days and the risk of relapse [23]. In our study none of the patients continued maintenance sessions compared to study [12] in which 20% of the patients followed their consolidation treatment.

In our case also no patient has benefited from the administration of «curare» for the prevention of trauma in patients during seizures, indeed its manipulation in all the literature turns out to require special conditions, the study for example [24] shows how to master the use of curare and its importance for the act of seismotherapy. It would therefore be assumed that in our context the risk was taken not to use curare probably due to lack of conditions or lack of training, however the course of the 264 sessions did not result in any incident of any kind.

No patient has received an EEG or ECG recording of per-seismotherapy, which is not consistent with the recommendations of a wide literature on the conditions for setting up a seismotherapy session.

5. Conclusion

This research attempted to describe the assessment and practice of seismotherapy in the Ibn Nafis hospital between 2012 and 2022. The results obtained indicate that the practice of seismotherapy at the Ibn Nafis CHU does not meet the required international standards and remains little developed in terms of the number of patients, its main indications are schizophrenic disorders and mood disorders. However, we found a favorable evolution in the short term with no incidents of any kind on the 264 sessions conducted. This suggests an absolute safety of seismotherapy in psychiatric patients who do not have organic comorbidities, and opens the door to further large-sample research and under favourable conditions on this category of patients. In addition, efforts should be made to encourage the use of this therapeutic process in other indications which are both curative and preventive.

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