The Use of Cannabinoids in the Management of Chronic Pain: A Perceptual Survey among Practitioners

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Abstract

The management of chronic pain represents a challenge due to limitations and side effects associated with conventional treatments. Thus, the introduction of medical cannabis represents a new effective strategy. The purpose of this study is to investigate the acceptability of medical cannabis among practitioners and evaluate its limitations and obstacles to its use in medicine. We collected the data through a questionnaire that targeted doctors (neurologists and oncologists) in major university hospitals and private practices. The results of our study showed that the most important limitations to the use of conventional treatment are end-of-dose failure and resistance to treatment. We also found that the lack of clinical studies, the risk of addiction and mental illness represent the principal limitations to the use of medical cannabis. In addition, our study confirmed that the major obstacles to the introduction of cannabinoids in the pharmaceutical market are related to legislation, religion, and social stigmatization. Despite these limitations and barriers, most Moroccan doctors are favorable to its prescription without fear of legal persecution. Our study, the first one of its kind in North Africa, provides essential data regarding the acceptability of its medical use and represents a starting point for more in-depth research.

Keywords: legislation; medical cannabis; pain management; religion; risk of addiction; sources of information.

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1. Introduction

Refractory chronic pain is a public health problem, and at the moment, the available treatments are not without adverse effects, treatment escape, etc. The endocannabinoid system is a new therapeutic route for treating chronic pain, now adopted by many countries. Morocco is one of the first producers of cannabis resin in the world. The development of knowledge regarding the medical use of cannabis would allow Moroccan researchers to create drugs based on cannabinoid derivatives and practitioners to treat diseases or symptoms sensitive to this therapy under a well-conceived regulation.

2. Material and method

The study was carried out over a period of 12 months from 05 December 2019 to 05 December 2020. We included in our study one hundred medical specialists, fifty oncologists, and fifty neurologists, of different ages, interviewed using a questionnaire in the following settings: Ibn Rochd University Hospital in Casablanca, Mohamed 6 University Hospital in Marrakech, Ibn Sina University Hospital in Rabat, Cheikh Khalifa Ibn Zaid University Hospital in Casablanca, Military Hospital Mohamed 5 in Rabat and 20 private practices. The questionnaire had three parts: The first part covered demographic information such as age, sex, place of practice. The second part described the different types of pain that doctors face and the factors linked to the failure of conventional treatments. The last part contained three sections. The first section assessed the medical knowledge of doctors about cannabis and their sources of information. The second section recorded their opinion regarding its benefits and risks and the obstacles they might encounter. Finally, the Third section evaluated their readiness to use this new therapeutic route. The data collected was integrated into a data collection file and subjected to statistical processing using SPSS software version 22.0. A descriptive and bivariate analysis of the data collected using the chi-square test allowed us to pinpoint the challenges that specialists face regarding pain management

3. Results

Demographic results are grouped in the following table:

Table 1: sex, age, family situation, area of practice

8	9	Response %
Sex	Woman Men	56 44
Age	25-39 >40	77 23
Area of practice	Public Private	70 30

The survey found that 70% of the subjects treated mixed pain (neuropathic and inflammatory) and that 81% of

them followed therapeutic protocols to treat it. However, 67% of them reported an insufficient response from their patients due to different reasons that are present in the graph below:
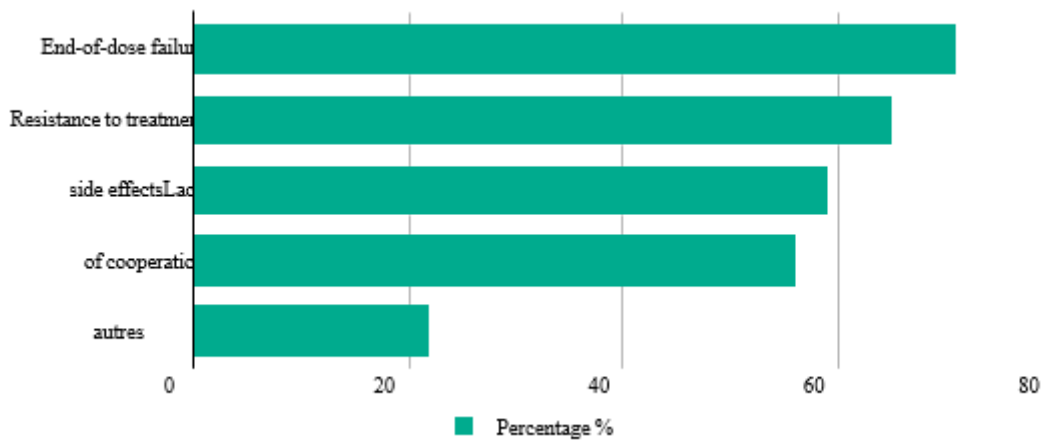

Figure 1: Barriers to effective pain management

63% of the subjects reported being aware of the medical application of cannabis, but only 13% of them said having a good knowledge regarding its use. The internet seemed to be the most common source of information used by our subjects at 45%, while continuous medical education represented only 4%.
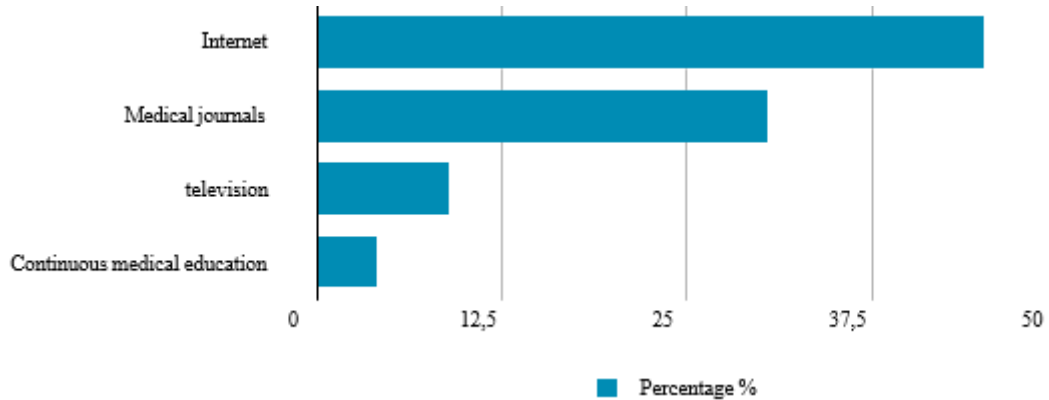

Figure 2: Sources of information

The study revealed that 67% of the subjects believed that cannabis has therapeutic potential. The most-reported arguments against its medical use were the lack of clinical studies at 81% and the risk of addiction at 60%. The major obstacles to the introduction of cannabis in therapy, according to our doctors, are listed in the graph below:

Finally, 84% of the subjects expressed their readiness to prescribe medical cannabis if the obstacles were well managed.
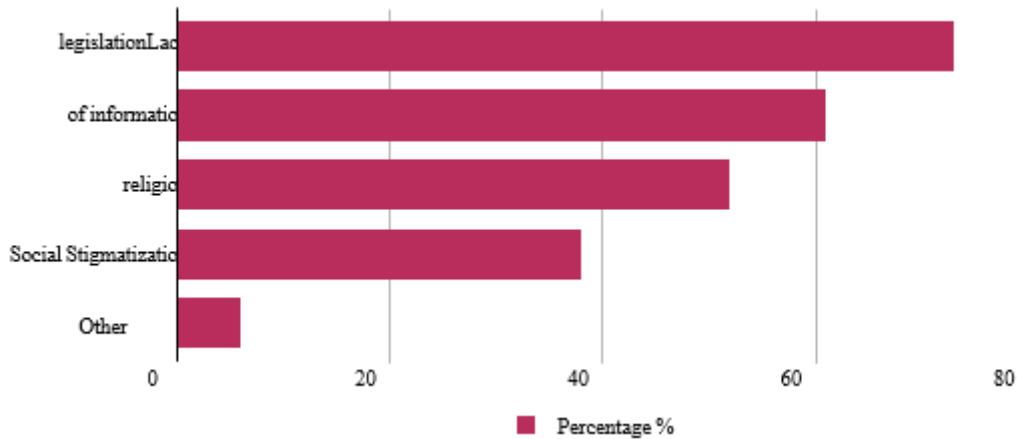
Figure 3: Obstacles to the introduction of medical cannabis

4. Discussion

4.1. The type of pain encountered

Mixed pain was reported by all of our subjects (neurologists and oncologists) at 70%, with a significantly higher (86%) rate among oncologists (P = 0.009). Previous studies highlighted that mixed pain for cancer patients was primarily related to tumor growth or the nervous and tissue damage caused by conventional treatments [1].

4.2. The standard treatments

4.2.1. Advantages

Mixed pain is a combination of both nociceptive and neuropathic pain. The conventional treatments recommended by the WHO appear to be the norm in 81% of cases in our study. Combining analgesics from different classes can reduce their side effects and work synergistically to enhance their therapeutic potential. Most neuropathic or nociceptive pain is particularly intense, and consequently, doctors may feel the need to move from one class of analgesics to another to control the pain.

4.2.2. Limitations

In some instances, according to the study, patients were responsive to the current therapeutic strategy. Indeed 67% of our subjects experienced that with their patients, especially oncologists at 78% (P = 0.01). In addition to that, the study objectified that end-of-dose failure (71%) and resistance to treatment (65%) were the most common limitation recorded by our subjects. Also, side effects related to the treatment, reported in 59% of the cases, were the most common limitation among oncologists.

4.2.3. Side effects

In a study published in 2004, 80% of patients experienced side effects related to opioids, such as constipation,

nausea, and drowsiness [2]. In 2011, another study objectified a strong association between opioid usage and lung cancer progression [3]. In 2015, a study showed that opioids increased the risk of bone fracture in elderly patients, as well as myocardial infarction and motor vehicle accidents related to hyper-vigilance in patients using opioids chronically [4]. The risk of death due to opioids overdose was the most important consequence, with high rates of mortality exceeding 16,000 deaths in 2015 [5].

4.2.4. Tachyphylaxis

Given the long duration of the treatment of chronic pain, one must evaluate opioids effectiveness. Tachyphylaxis is defined as a rapidly diminishing response to successive doses of a drug, rendering it less effective. Some studies showed that the efficacy of opioids lasted no longer than 9 to 32 weeks [6]. In 2014, a study showed that tachyphylaxis was associated with dependence or hyperalgesia due to opioids [7].

4.6. Dependence and addiction

A breakthrough pain that occurs consistently before the next scheduled dose of around-the-clock opioids is called an end-of-dose failure. 71 % of our subjects experienced an end-of-dose failure with their patients, with a higher rate (88%) among oncologists (P=0,0001), which may lead to tolerance or dependence. Addiction due to opioids is frequent in the US because of the ease of their prescription. A study published in 2010 by the SSA (Society for the study of addiction) found that 26% of patients treated chronically with opioids end up being addicted [8].

5. Sources of informations

Due to the lack of studies that evaluate doctors' medical knowledge regarding the medical use of cannabis in other Maghreb countries, we focused our attention on Western countries, especially North America. Our results were slightly different from those of another study published in 2015, where 67,1% of doctors relied on scientific journals and 54,7 % used social media versus 45% and 38% respectively in our study. Other sources of information were more widely available in Western countries than in Morocco; in Western countries, 36,8% of doctors relied on conferences and 32,9% on continuous medical education (CME) against 0% and 4% respectively in our study [9].

Table 2: Sources of information used in North America vs Morocco

8	9 Scientific journals	10 Social media	11 CME	2 Conferences
Washington	67,1 %	54,7 %	32,9 %	36,8 %
Colorado	61 %	36 %	13 %	20 %
Maroc	45 %	38 %	4 %	0 %

6. The link between the level of knowledge and perception

It is worth noting that precise medical knowledge plays an essential role in choosing the correct treatment for

the patient. In a study published in 2017, 80,1% of general practitioners who received training regarding addiction treatment believed that medical cannabis has its place in pain management, while 90% of them support its use in palliative care. [10].

7. Limitations of medical cannabis according to doctors

Of the 33% of the subjects who didn't see a real benefit of using medical cannabis as a treatment, 81% of the subjects reported that the lack of clinical studies is one of the main arguments against its use. In addition to that, 60% of our subjects reported the risk of addiction.

7.1. The lack of clinical studies

In Washington [9], 61,6% of doctors believed that there's a small number of studies regarding the use of medical cannabis and thus, emphasized the importance of doing more studies. 81 % of doctors in our study shared that same belief. In 2016, several studies discussed more thoroughly the subject of pain management. For patients who have Parkinson's disease, cannabinoids not only had a good analgesic effect but also improved their motor symptoms [11]. It is worth noting that neurodegenerative diseases are also considered a therapeutic target for cannabinoids. In Alzheimer's disease, the THC reduces inflammation and Beta Amyloides plaques accumulation and thus is neuroprotective [12]. Other studies that studied their use in epilepsy, multiple sclerosis, bipolar disorder, cancer, HIV infection, and other diseases, demonstrated their therapeutic potential [13;14;15;16;17]. Therefore, it is not the lack of clinical studies that limit doctors from prescribing medical cannabis but their lack of interest in it. Our results showed that the unregulated social media and social demonization of cannabis regarding its risk of addiction and adverse effects discouraged more scientific research from being carried out. It leads us to the second argument that is the risk of addiction.

7.2. The risk of addiction

60% of the doctors in our study feared the risk of addiction due to cannabis versus 61,6% in Washington [9]. In Colorado, 56% of doctors licensed to prescribe it feared that risk too versus 88% who aren't licensed [18]. In 2015, a study suggested the study of the endocannabinoid system and its benefits. That will lead to new effective treatments for addiction due to stimulants (such as cocaine and amphetamines) [19]. The results of these studies may also help to treat addiction due to opioids by target both the endocannabinoid and opioid systems [20].

7.3. The risk of mental illness

One of the reasons why there are concerns regarding the usage of medical cannabis is its impact on mental health. Indeed, 57% of doctors in Colorado [18] versus 42% in Washington [9] believed that cannabis could affect mental health. In a study published in Ireland, 77,3% of doctors suggested that it could cause schizophrenia [10]. In 2015, another study confirmed the causal association between cannabis and the risk of future schizophrenia. However, comorbidities associated with cannabis and schizophrenia and population characteristics may overestimate their causal association, especially after a stratified analysis [21].

8. Main obstacles to the introduction of medical cannabis

8.1. Legislation

Our study confirmed that the major obstacle to cannabinoids in the pharmaceutical market is legal in 73%. In the state of Washington, even if its medical and recreational usages are authorized, 68,2% of doctors believe that legal restrictions need to be reconsidered [9]. in Ireland, 81,1% of doctors support the legalization of medical cannabis [10]. Therefore, to carry more scientific research and let healthcare workers approach and discuss this subject during their training, legislatures should reconsider its legal status. Our study also objectified another major obstacle, and that is religion.

8.2. Religion

Morocco is a Muslim country that follows the law school of Imam Malik. This school suggests that narcotics and other substances causing drowsiness are allowed in some situations, such as anesthesiology, when managing limb amputation and excruciating pain, by applying the principle of choosing the lesser of two evils [22]. Despite the favorable opinion of scholars regarding the medical use of cannabis, Moroccan doctors are still reluctant to prescribe it due in part to social stigmatization.

8.3. Social stigmatization

Social stigmatization is also an obstacle (38%) limiting the prescription of medical cannabis, but to a lesser degree in our country than in other countries like the United States of America, wherein Washington represented 46,7% [9]. A Canadian study on HIV patients found that patients treated with medical cannabis noticed a negative and skeptical attitude towards them from patients who weren't on that treatment [23]. Tobacco, which is legal and socially accepted, causes approximately 8 million deaths every year, more than 7 million deaths due to fatal diseases associated with its use, and around 1.2 million deaths due to non-smokers being exposed to second-hand smoke, according to the World Health Organization (WHO) statistics of 2019 [24]. Alcohol which is also legally accepted and widely available to the public causes nearly 88.000 deaths and 31% of motor vehicle accidents (MVA) every year. In 2014, the number of MVA related to alcohol consumption reached 9.967 deaths in the United States of America [25]. In Morocco, it causes between 3 % to 11% of MVA [26]. However, the number of deaths related to the use of cannabis is almost nonexistent [27]. Some sources suggested that a lethal dose only happens when consuming around 42 kg of cannabis in 15 minutes [28].

8.4. Doctors' opinions regarding the introduction of medical cannabis

In our study, 84% of doctors supported the prescription of medical cannabis versus 71,7% in the USA without fear of legal persecution that may follow its prescription [9]. In the journal " the New England Journal of Medicine," a study showed that 76% of doctors from different countries who participated in the survey were favorable to its prescription, apart from the fact that it was illegal in some countries from where the voting came [29]. We found in our study that the prescription of medical cannabis was strongly associated with religion, a barrier to its introduction in the medical practice (P=0,03). To our knowledge, our study was the only one of its

kind in Morocco and Arab countries. The legislative obstacle remains the prime barrier in our study because the current data showed evidence of its benefits. Our subjects also predominantly support its legalization and its use in medicine. In addition, legislatures should consider healthcare workers' opinions to choose the best treatment that suits the patient's medical condition.

9. Conclusion

Due to the limitations of conventional (standard) treatments and their high failure rate, new effective treatments should take place, and medical cannabis represents a perfect example. It is undeniable that doctors have heard of it, although only a minority have a good knowledge of it. It shows us that its use and benefits are not well known by Moroccan doctors who need to be rightly informed. Therefore, this new therapy and the study of the endocannabinoid system should be part of their continuous medical education (CME) and training. We found that even if most doctors have little information regarding its use, they agreed that it can be beneficial for their patients and that the major obstacle limiting its prescription is legal. Other barriers worth mentioning are religious and sociocultural. Thus, communicating accurate information, raising public awareness, and initiating national debates are essential to let Morocco carry out more clinical research and consequently authorize its use in medicine. Our study, the first one of its kind in North Africa, provides crucial data regarding the acceptability of its medical use and represents a starting point for more in-depth research.

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