

Cannabis Use in Rare Neuroimmune Disorders

You can view this presentation at: youtu.be/5FRIANEIDfs

[00:00:05] **Melanie Delgado:** Good morning, everyone. My name is Melanie, and I first would like to begin by thanking GG and Chitra for allowing me to present my research today. My clinical team and I did a cross-sectional survey study on cannabis use amongst individuals with CNS neuroinflammatory diseases. Here are my disclosures.

[00:00:27] Presentation overview: I will begin talking about what sparked interest in creating this survey study, our methods, study objectives, key research questions, results, and conclusions. So, what motivated this study? Many providers have expressed that their patients with NMO, MOGAD, ADEM, and transverse myelitis are interested in using cannabis use. However, there's very little literature talking about the typical patterns of use, what symptoms are being targeted, side effects, and whether or not cannabis use is effective.

[00:01:03] On the bottom right, you'll see a study that Nanthaya posted recently. She did a case study on one of her patients with NMO, and she administered cannabis extract. Amber Salter on the bottom, she did a study using the NARCOMS MS Registry, whether or not individuals with MS use cannabis. And Jessica Rice on the top right did a cross-sectional survey analysis on how cannabis is being used for their spasticity.

[00:01:42] Methodology and study overview: As I mentioned before, this is a cross-sectional survey study. We understand that individuals that use cannabis may feel a little uncomfortable sharing that they use it, so we made our study completely anonymous. It is open to all adults with NMO, MOGAD, ADEM, and transverse myelitis.

[00:02:01] We created this survey using a REDCap Software. And how we recruited our participants was through three foundations: we reached out to the SRNA, we reached out to The MOG Project, and the Sumaira Foundation. I also spoke to our clinicians at our MGH Neuroimmunology Clinic in Boston, and I handed out flyers and spoke to our patients.

[00:02:27] Study objectives: The purpose of this study is to address cannabis use among NMOSD, MOGAD, ADEM, transverse myelitis patients for symptom release. We looked at modes. What is the most common form of medical cannabis use? We looked at frequency. How frequently are individuals using medical cannabis? And efficacy, how effective do patients perceive cannabis to be?

[00:02:53] Here's a flow diagram. As I mentioned before, we reached out to three foundations. From the three foundations, we had 386 total respondents, and then we filtered out a few incomplete surveys. We also filtered out those patients that said they were diagnosed with MS and those that were caregivers.

[00:03:13] From there, we had a total of 267 data analyses that we used, and from the 267 respondents, 48 had NMO, 88 had MOGAD, three had ADEM, and 128 had transverse myelitis. Here's a table showing our demographics. Our average age was 53 years old. The majority were Caucasian, 82%, and 48% had transverse myelitis, 30% said that they were full-time employers, and 37% were cigarette smokers.

[00:03:57] Next, we wanted to learn about the reasons for starting cannabis. Fifty-seven out of 145 respondents said that they were using it recreationally and found that it was helpful for their symptoms, for their diagnosis. Forty-seven out of 145 said that they were recommended to use cannabis from friends and family, and 44 out of a 145 said that it was a doctor's recommendation.

[00:04:25] Next, we wanted to know if you are using cannabis, what symptoms are you targeting? And 72.5% said that they were targeting it for their sleep disturbances, 59.5% said that they used it to target their muscle spasms, cramps, and spasticity, and 31.3% said that they were just using it for other pain.

[00:04:52] Next, we wanted to investigate the frequency of cannabis use within the past year. We wanted to look two aspects of this: the frequency of cannabis use for medical reasons, and we also wanted to know the frequency of cannabis use for any reason at all within the past year. On the left-hand side, you'll see that 41.7% said that the majority of the respondents will use cannabis for their medical reasons.

[00:05:16] But on the other side, we also saw that the frequency of cannabis use for all reasons is similar to the use for medical reasons. We wanted to know: if you are using cannabis, how are you using it? And the majority said that they are using it using oral consumption. Many individuals said edibles and brownies was the most common form that they used it, next was smoking, and third most common was vaping.

[00:05:50] We also looked at the composition of cannabis products used. Individuals primarily use cannabis that have a balanced THC to CBD ratio. They said 48.3% used the balanced ratio, but then 43.7% said that they would use a high-THC to low-CBD composition. Next, we looked at the patient-reported effectiveness of cannabis. We did not objectively measure effectiveness.

[00:06:23] All of these responses came from our survey. On the X-axis of this diagram, you will see a range of effectiveness. On the far left, you will see how much it worsened a lot, and on the far right, you'll see how much it helped a lot. One of the most common symptoms that they reported that it was effective to was muscle spasms, cramps, or spasticity; other pain; anxiety; sleep disturbances; and neuropathic pain.

[00:06:58] Next, we looked at the side effects of cannabis use. Again, on the X-axis, you'll see a range of them never experiencing that side effect on the left-hand side, and on the right-hand side, how severely they experienced that side effect. Some of the most common side effects that was reported was drowsiness, feeling high, increased appetite, decreased concentration or motivation, and thinking problems, brain fog or confusion.

[00:07:34] Next, we wanted to know if you are using cannabis, why did you stop or why did you decrease using it? The majority of the individuals reported that it was due to cost or lack of insurance coverage. The second-most common response was concerns about potential side effects, and the third-most common response was concerned about drug testing.

[00:08:01] Next, we looked at the distribution of disability ratings and medical cannabis use. Medical cannabis use is most common amongst those with intermediate self-reported disability ratings. On the X-axis of this diagram, you'll see the range of the disability -- those that have little to no disability on the left-hand side, and on the right-hand side, those with severe disability.

[00:08:34] Next, we wanted to learn about the patient's perspectives on the current and desired roles of medical providers in cannabis use. Forty-eight percent said they have never talked to their doctors about cannabis and marijuana use, 19% reported that their doctor has asked about cannabis use, and 47% reported that they would feel comfortable discussing cannabis with their doctors.

[00:08:57] We also wanted to know the barriers that our patients experience when talking to their providers about cannabis use, and they said that they believe their provider would disapprove or be judgmental about cannabis use.

[00:09:16] In conclusion, almost 60% of our survey respondents reported using medical cannabis in the past year, and about one out of three use cannabis approximately daily. The most popular method of cannabis is oral consumption, such as edibles and brownies. The second-most common is smoking, including joints, pipes, and blunts. The third-most frequent method is vaping.

[00:09:42] Cannabis was perceived as most effective for treating muscle spasms, neuropathic pain, sleep disturbances, and anxiety. The most common side effects of cannabis use were drowsiness, feeling high, increased appetite, dizziness, and brain fog. Given that cannabis use is widespread among individuals with CNS neuroinflammatory diseases, we believe that there should be more prospective research to guide appropriate and safe use of cannabis for our patients.

[00:10:16] I would like to thank the SRNA committee and members, my MGH team, Dr. Anastasia Vishnevetsky, Dr. Michael Levy, Dr. Philippe, and Dr. Takah, and to all the participating patients. A huge thank you to every patient and foundation who participated in this research study because with you this project is now able to make a difference in the world of rare autoimmune diseases.

[00:10:42] Here are my references. And Dr. Anastasia is also joining us through Zoom. So, if anyone has any questions at all, we'd be happy to answer them. Thank you.

[00:11:08] Audience Member 1: Very nice presentation. It's quite amazing. For many of our patients actually, in my experience, describe using marijuana. And some of them actually are very eager to start the treatment. In your survey, was there any open question about how to advise clinicians to tackle the issue of cannabis use? And the reason is, as you demonstrate clearly, one of the major problems for initiating treatment with cannabis is the patients are afraid to interact with physicians about cannabis use. And physicians also are not necessarily clear in when to start or when to recommend that treatment. So, was there any hint from the patient population about conversation with the healthcare provider?

[00:11:59] And the second one is: the use of other medications in association with cannabis. For example, I saw that your study, one of the major goals was to improve sleep. Were the patients using concomitantly other medications to help sleep? And if there was any measure of that association using other medication for what the patient was using cannabis?

[00:12:25] **Melanie Delgado:** Well, to answer your first question, we did not ask how they would like the physicians to approach their patients with whether or not they use cannabis. But I think, moving forward, that

is something we could incorporate in another study. And in the second question -- correct me if I'm wrong, Anastasia -- patients were taking other medications for their sleep disturbances in addition to cannabis, as well.

[00:12:55] **Dr. Anastasia Vishnevetsky:** Yeah, so I can jump in a little bit. The main question where we ask people about their interaction with physicians was essentially: we asked if they had spoken to their physicians or not, and if they had, if that had been them that had brought it up or if it was the physician who brought it up for them. About 50% of patients said that they had spoken to their doctor about it, and between those, it was about half and half between how many had brought it up to their doctor versus how many had the doctor bring it up to them.

[00:13:21] And then, absolutely, we did ask about medications. We didn't show the data, but we have pretty detailed medication data on all of the patients, including what immunotherapies they were on, as well as what medications for pain, spasticity, and depression, or sleep problems they were on. We actually asked questions -- well not for all of the symptoms, but for three of the symptoms.

[00:14:07] So, for neuropathic pain, for spasticity and for sleep. We asked if they had used cannabis to substitute or replace some of their medications, and they did. I can actually give you a number for that. So, sorry. And for the last one, I actually have a number. So, 48% said they've never spoken to their doctors, 19% only said the doctor brought it up and asked them about it, and 33% said they brought it up themselves. So, almost double said that they had brought it up.

[00:14:32] And then, of those and other people who answered the survey, 15% said they would never feel comfortable talking to their doctor about cannabis, 38% said they'd be comfortable with some of their doctors, and about half, 47% said they'd be comfortable talking about it with all of their doctors.

[00:14:32] And then back to the substitution question: so, of the people who are using cannabis for pain and/or spasticity, about 50% are using it to replace or reduce their other existing medications. The numbers are similar for sleep -- 46% is for depression, anxiety, or sleep. And then, yeah, so they're definitely using other medications; they're using cannabis to decrease the medications. I don't know if they are experiencing worse side effects as a result of combining them.

[00:15:32] **SRNA Staff Member:** We had a question from one of our online attendees. Jody was asking if the study is still open or if there are subsequent studies that you're planning on doing?

[00:15:42] **Melanie Delgado:** So, the study is currently closed, but I believe there is going to be a migraine cannabis study that we're working on next.

[00:15:52] **Dr. Anastasia Vishnevetsky:** So, there's gonna be a survey study on headache and eye pain that we're gonna send out. It's not gonna be specific to cannabis, but there'll probably be a question or two related to it. The bigger thing on the cannabis stuff that we're doing, that is coming up, is that we are going to, probably in early 2025 -- hopefully, pending some of our regulatory approvals -- start a prospective clinical trial evaluating a cannabinoid product called nabiximols for the treatment of NMOSD-related spasticity. So, that one is a little bit more focused, and there's more detailed inclusion criteria, and we will definitely circulate information about the trial to SRNA once it's open.

[00:16:44] Audience Member 2: Hi. Thank you very much for this information. I have a couple of questions. So, is medicinal marijuana essentially available in all states? That's one question. I'm not a patient, but if I was, how would I find out who is legally able to prescribe that for me? And were any of these patients on Marinol or tried Marinol, or was it primarily just through other sources?

[00:17:23] **Dr. Anastasia Vishnevetsky:** Yeah. So, medicinal marijuana is not legal in all states. That's a big part of why we kept the entire survey in anonymized; it was just kept secure or confidential, there was actually no way for us to trace back who answered the question and where they were from. We had thought about actually asking: Is marijuana legal in your state? or Are you obtaining it legally or illegally? We felt that that was too intrusive of a question, or potentially uncomfortable of a question for folks. So, we don't know that.

[00:18:05] We know that people had a lot of, on that, in the graph that Melanie showed about why people are using less than they otherwise would. Legal concerns and concerns about drug testing were relatively high up there. And I really would advise patients to talk about it with their doctors. I hope that we get a higher number of people asking. And I hope that doctors would engage that question. And part of the goal of this also, and to publish it, it's partially for patients, but also, for physicians as well, to normalize the conversation.

[00:18:43] But each state has different rules to provide regulatory frameworks. In Massachusetts, you typically do not need a medical prescription; you just go to a dispensary and get marijuana. However, in other states, you need to ask a doctor for a note of some kind. And then, we didn't ask specifically about whether folks use Marinol. There were some open-space answers for folks to say what kind of marijuana products they were using or cannabis products they were using, and I didn't see anyone mention Marinol specifically.