Efficacy and Safety of Medical Marijuana (Cannabis) in Selected Neurologic Disorders

Case Presentation:

A 34-year-old female with a history of multiple sclerosis (MS) returns to the neurology clinic for follow-up.

The patient was diagnosed with MS at the age of 28 after she presented with various neurologic problems, including optic neuritis and transverse myelitis. She now experiences residual visual loss and spastic paraplegia. She has done well on daily glatiramer acetate injections. Her largest problem has been persistent spasticity in the legs. The spasticity is very bothersome and interferes with her work and sleep. She also feels her quality of life is diminished due to this problem. She has had treatment with various medications, including baclofen, tizanidine, and benzodiazepines, to which her spasticity has been unresponsive or which she has been unable to tolerate. She recently heard about medical marijuana (cannabis) through various media sources. She expresses interest in trying cannabis, having spoken with a friend in her MS support group who has heard about medical marijuana as a treatment for spasticity. Besides her spasticity, the patient does not have any major complaints. She is tolerating the glatiramer acetate injections. She has no history of prescription drug misuse or illicit substance abuse.

Her medical history includes MS and seasonal allergies. Otherwise, she denies any chronic illness.

She takes oral contraceptives and glatiramer acetate injections.

She has no known drug allergies.

She does not smoke, drink alcohol, or use illicit substances. She is a computer programmer.

There is no family history of neurologic disease.

In addition to what is noted above, a complete 14-topic review of systems was obtained and was unremarkable.

On physical examination, she is a well-developed and well-nourished female in no distress. She arrives in a wheelchair. She is afebrile. Her blood pressure is 120/60, pulse is 72, and respiratory rate is 12.

No bruits are heard over her neck. There are no murmurs or abnormal heart sounds.

She is alert and oriented to person, place, and date. Registration and 5-minute recall are normal. She follows commands and names and repeats without difficulty. Her speech is fluent.

Cranial nerve testing reveals a left afferent pupillary defect; she has pallor of her left optic disc; the right optic disc is normal; visual fields are full to confrontation, and extraocular muscles are intact. Facial sensation is normal. She has no facial weakness. Hearing is intact bilaterally to finger rub. Palate, tongue, and uvula are midline. Shoulder shrug strength is normal.

Motor strength is MRC grade 5/5 in the arms and MRC grade 3/5 in the legs with spastic paraplegia. The majority of her leg muscles score a 3 on the modified Ashworth scale.

Sensory examination shows absent vibratory perception in the toes, ankles, and knees; she has a T10 pinprick sensory level.

Reflexes are 2/4 in the arms and 4/4 in the legs. There is ankle clonus. Plantar responses are extensor bilaterally.

Coordination is normal on finger–nose–finger bilaterally. Heel–knee–shin testing cannot be performed due to her spasticity.

She is nonambulatory.

Review of recent diagnostic studies reveals a normal vitamin D level. Recent MRI of her brain and spine shows chronic changes consistent with MS. There are no new enhancing lesions, and the images are unchanged from a study performed 2 years previous.

Knowing that she planned to discuss medical marijuana at this follow-up visit, you prepared by reviewing your local state regulations with regard to the drug. You discuss with the patient that unfortunately her spasticity has not responded to the typical medications used to treat this problem. You inform her that the recently published AAN systematic review “Efficacy and safety of medical marijuana (cannabis) in selected neurologic disorders” suggests medical marijuana formulations such as dronabinol (a synthetic form of tetrahydrocannabinol, or THC) are probably effective at reducing her subjective discomfort from spasticity.[1] If continued for at least 1 year, the dronabinol might be effective for reducing objective measures of spasticity. You advise her about potential side effects, including cognitive impairment. You also state that the patient will need to agree to your practice’s standard pain contract and that any violations of this contract may result in discontinuation of the prescription. After some discussion, the patient elects to pursue the treatment. You prescribe dronabinol 2.5 mg twice daily, with a plan to titrate the dosage upward depending on her response. You schedule a follow-up to occur in the near future.

Questions

1. Dronabinol is one of the two US Food and Drug Administration (FDA)–approved forms of medical marijuana. It has been approved for:
A. Anorexia in patients with AIDS and weight loss

B. Immunosuppression in MS
C. Nausea and vomiting in patients receiving cancer chemotherapy
D. All of the above
E. A and C only

The correct answer is E. The FDA approved dronabinol as treatment for anorexia in patients with AIDS and weight loss and for nausea and vomiting in patients receiving cancer chemotherapy. Dronabinol currently is in use in the United States.

2. Forms of medical marijuana that were studied outside the United States and found to be effective for controlling pain or subjective measures of spasms were often designed to have less THC and more cannabidiol to lower the psychoactive effects.[1] These include:
A. Pills containing cannabadiol extract
B. Pills containing THC and cannabadiol extract in close to 1:1 ratio
C. Oral mucosal spray containing cannabadiol and THC that can be self-titrated
D. Synthetic THC (dronabinol and nabilone)
E. All of the above

The correct answer is E. All these formulations were studied outside the United States. Smoked marijuana was studied in the United States.

3. Side effects of medical marijuana that are similar to those of other agents used for pain or spasticity include:
A. Drowsiness and poor coordination
B. Fatigue and nausea
C. Hallucinations and psychosis
D. All of the above
E. A and B only

The correct answer is E. Of the agents used for pain or spasticity treatment, medical marijuana is unique in having the potential to cause hallucinations and psychosis. These side effects are not found in treatment with agents such as baclofen or tizanidine, which are CNS depressants but do not invoke psychosis.

Diagnosis Coding[2,3]

If this were a medical record there should be a diagnostic statement for the visit for this established patient. Stated in the case report is the diagnosis of MS and its current clinical manifestations of spastic paraparesis and vision loss from past optic neuritis. Only the spastic paraparesis is addressed in the plan.

MS has only one code in ICD-9-CM and ICD-10-CM, so adding codes for the manifestations best indicates severity of disease. In both ICD-9-CM and ICD-10-CM, “plegia” and “paresis” are synonymous. In ICD-10-CM, paraplegia is divided into “complete,” “incomplete,” and “unspecified.” Unlike paresis of an upper limb, there is no indication of spasticity, nor is there a good code for spasticity in either classification.

ICD-9-CM codes for this case:

340 Multiple sclerosis
344.1 Paraplegia

The ICD-10-CM codes for this case:

G35 Multiple sclerosis
G82.22 Paraplegia, incomplete

Evaluation and Management (E/M) Coding

This is an established patient because her last visit with you was in the past 3 years. Choosing a CPT code requires analyzing the documented history, examination, and medical decision making (MDM). However, the extent of the history documented and examination performed should be determined on the basis of the chief complaint. In the case of this chief complaint, it is reasonable to perform a comprehensive history and examination, and the examination was documented on the basis of the 1997 Guidelines for the Neurological Single System Examination. A patient with a Bell palsy returning for a 2-week follow-up visit may have a chief complaint of "I am all better, doctor," in which case it is not reasonable to repeat a comprehensive history and examination. MDM is calculated after consideration of the number of diagnostic or management options, amount and complexity of data review, and risk of complications, morbidity, and mortality. In this case, the MDM can be considered high risk because she has a chronic illness with a threat to bodily function and a need for drug therapy that will require intensive management (only one item would be required). To submit a level 5 established care visit (99215), two of the three basic elements (history, examination, and MDM) must be comprehensive, and in this case all three elements meet comprehensive standards. A visit may be coded on the basis of time spent, as long as more than half the time of the visit is dedicated to patient education or coordination of care. To choose a level 4 or level 5 established visit (99214 or 99215), the duration of the visit must be 25 minutes (for 99214) or 40 minutes (for 99215). In this case you spent 30 minutes with the patient, which would qualify for a 99214 visit. However, you have met the elements for a 99215 on the basis of your level of E/M documentation standards for history, examination, and MDM.

1. Koppel BS, Brust JCM, Fife T, et al. Systematic review: Efficacy and safety of medical marijuana (cannabis) in selected neurologic disorders. Report of the Guideline Development Subcommittee of the American Academy of Neurology. 2014;82:1556–1563.
2. Centers for Disease Control and Prevention. International classification of diseases, ninth revision, clinical modification (ICD-9-CM). *www.cdc.gov/nchs/icd/icd9cm.htm.*
3. Centers for Disease Control and Prevention. International classification of diseases, tenth revision, clinical modification (ICD-10-CM). *www.cdc.gov/nchs/icd/icd10cm.htm.*

This systematic review was endorsed by the American Autonomic Society, the American Epilepsy Society, the Consortium of Multiple Sclerosis Centers, the International Organization of Multiple Sclerosis Nurses, and the International Rett Syndrome Foundation.

Disclaimer

This statement is provided as an educational service of the American Academy of Neurology. It is based on an assessment of current scientific and clinical information. It is not intended to include all possible proper methods of care for a particular neurologic problem or all legitimate criteria for choosing to use a specific procedure. Neither is it intended to exclude any reasonable alternative methodologies. The AAN recognizes that specific patient care decisions are the prerogative of the patient and the physician caring for the patient, based on all of the circumstances involved.