

Multiple Sclerosis: Review Questions

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QUESTIONS

Choose the single best answer for each question.

- Which of the following statements regarding multiple sclerosis (MS) is NOT correct?**
 - MS is an immune-mediated disease
 - MS is the most common neurologic disorder affecting young adults
 - The male-to-female ratio in persons affected by MS is 2:1
 - The risk for MS in a monozygotic twin is 25% to 30%
 - The risk for MS in the general population is 0.1%
- A 31-year-old woman with a history of MS, including 2 exacerbations with complete recovery in the past 2 years, develops optic neuritis. She is treated with methylprednisolone sodium succinate, intravenously, and experiences complete resolution of her symptoms in 3 weeks. Which of the following types of MS does the patient most likely have?**
 - Primary progressive
 - Progressive-relapsing
 - Relapsing-remitting
 - Secondary progressive
- Which of the following is associated with a better prognosis in a patient with MS?**
 - Brainstem and cerebellar symptoms
 - Disease onset after age 35 years
 - Female gender
 - Higher incidence of attacks
 - Poor recovery after an exacerbation
- Which of the following agents is NOT typically used to manage fatigue in patients with MS?**
 - Amantadine
 - Baclofen
 - Fluoxetine
 - Methylphenidate
 - Pemoline
- Which of the following statements regarding cognitive function in patients with MS is NOT correct?**
 - Cognitive dysfunction has no association with disruption of daily activities in most patients with MS
 - Cognitive dysfunction is related to brain atrophy and total lesion burden as seen on magnetic resonance imaging
 - Cognitive dysfunction observed in patients with MS includes but is not limited to memory loss, inattention, slow information processing, and difficulty with abstract concepts
 - Cognitive function is affected in approximately 45% to 60% of patients with MS
 - Demyelination in the frontal lobes and corpus callosum is more often associated with cognitive dysfunction than is demyelination in other parts of the brain

(turn page for answers)

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EXPLANATION OF ANSWERS

1. (C) **The male-to-female ratio of persons affected by MS is 2:1.** On the contrary, the female-to-male ratio in multiple sclerosis (MS) is approximately 2:1. MS is an immune-mediated inflammatory disease and is the most common neurologic disorder affecting young adults. It affects millions worldwide and approximately 400,000 in the United States alone. Whereas the risk for MS occurring in the general population is 0.1%, the risk is 25% to 30% for MS occurring in a monozygotic twin and 3% to 5% in a dizygotic twin.^{1–3}
2. (C) **Relapsing-remitting.** Relapsing-remitting MS describes disease relapses with full or partial recovery. The periods between relapses are characterized by a lack of disease progression. Patients with primary-progressive MS experience disease progression from disease onset, with occasional, temporary, and minor episodes of improvement. Progressive-relapsing MS is a progressive disease from disease onset, but there are clear acute relapses with or without recovery. The periods between relapses are accompanied by disease progression. Secondary-progressive MS begins with a relapsing-remitting course followed by progression with or without occasional relapses without full recovery.³
3. (C) **Female gender.** The prognosis for men with MS is poorer than for women. Other poor prognostic factors include cerebellar and brainstem symptoms, onset of disease after age 35 years, higher incidence of attacks, poor recovery after an exacerbation, progressive course from onset, and higher lesion load on magnetic resonance imaging (MRI).^{3,4}
4. (B) **Baclofen.** Approximately half of patients with MS experience fatigue. Amantadine, fluoxetine, methylphenidate, and pemoline are used to treat fatigue, whereas baclofen is used to treat spasticity. The new agent modafinil, approved for treatment

of patients with narcolepsy, has also been shown to ameliorate fatigue.⁵

5. (A) **Cognitive dysfunction has no association with disruption of daily activities in most patients with MS.** Cognitive impairment refers to adverse changes in high-level brain functions, such as language, visual perception and construction, calculation ability, attention, memory, and executive functions (eg, planning, problem solving, self-monitoring). This impairment is observed in approximately 45% to 60% of patients with MS. Cognitive dysfunction is related to brain atrophy and total lesion burden on MRI, and demyelination in the frontal lobes and corpus callosum is more often associated with cognitive dysfunction than is demyelination in other parts of the brain. There is little or no correlation with disease severity or duration.⁶

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