

## Multiple Sclerosis

1 . Geographically speaking, the lowest risk of developing multiple sclerosis (MS) is noted in persons living

- A) near the equator.
- B) in the extreme north.
- C) in the extreme south.
- D) in developed countries.

2 . MS lesions

- A) occur only in the brain.
- B) cluster near the ventricles.
- C) cluster in the peripheral nerves.
- D) occur primarily in the gray matter.

3 . The demyelination that underlies MS

- A) impairs nerve transmission.
- B) bolsters the immune attack on oligodendrocytes.
- C) causes perpetuation of the proinflammatory condition.
- D) permits leukocytes to enter the central nervous system (CNS).

4 . Spasticity associated with MS

- A) is never painful.
- B) does not usually affect ambulation.
- C) usually affects the muscles of the trunk and face.
- D) is more prominent in the lower extremities than the upper extremities.

5 . MS pain is mainly

- A) visceral.
- B) somatic.
- C) neuropathic.
- D) musculoskeletal.

6 . The most common ophthalmologic symptom of MS is

- A) astigmatism.
- B) optic neuritis.
- C) upbeat nystagmus.
- D) intranuclear ophthalmoplegia.

**7 . The most common type of MS is**

- A) benign.
- B) malignant.
- C) relapsing-remitting.
- D) primary progressive.

**8 . Primary progressive MS is characterized by**

- A) alternating series of clearly defined relapses followed by remissions.
- B) steady disease progression with occasional remissions and temporary minor improvements.
- C) a long-term absence of symptoms with no functional impairments 15 years after disease onset.
- D) progressive neurologic impairment between relapses without any well-defined periods of remission.

**9 . Malignant MS**

- A) occurs most commonly in older adults.
- B) is also known as Uhthoff phenomenon.
- C) is associated with smaller lesions involving the cervical spine.
- D) results in major disability and usually death within one year of onset.

**10 . Early-onset MS**

- A) accounts for the majority of MS cases.
- B) is usually characterized by a relapsing- remitting course.
- C) is only diagnosed in patients younger than 10 years of age.
- D) most commonly presents with motor, rather than sensory, symptoms.

**11 . In a patient with MS, a positive Halmagyi-Curthoys head impulse test is indicative of**

- A) optic neuritis.
- B) loss of proprioception.
- C) lesions on the cervical spine.
- D) peripheral vestibular disease.

**12 . An eloquent lesion on the brainstem is associated with which expected clinical neurologic manifestation of MS?**

- A) Ataxia
- B) Optic neuritis
- C) Cranial nerve palsies

D) Trigeminal neuralgia

**13 . An MS lesion on the cerebellum may result in**

- A) tremor.
- B) visual acuity loss.
- C) reduced postural control.
- D) bowel/bladder/sexual dysfunction.

**14 . An MRI showing small lesions that do not enhance with a contrast agent is indicative of**

- A) benign MS.
- B) relapsing-remitting MS.
- C) primary progressive MS.
- D) secondary progressive MS.

**15 . Most MS lesions within the spinal cord are located in the**

- A) central cord.
- B) dorsal columns.
- C) lateral corticospinal tract.
- D) lateral spinothalamic tract.

**16 . The most sensitive predictor of conversion from clinically isolated syndrome to MS is**

- A) lesion load on MRI.
- B) demyelination detected by myelin water fraction imaging.
- C) detection of oligoclonal bands in cerebrospinal fluid by isoelectric focusing.
- D) assessment of glutamate levels by proton magnetic resonance spectroscopy.

**17 . Findings of which type of evoked potential testing are part of the diagnostic criteria for MS?**

- A) Visual evoked potentials
- B) Somatosensory evoked potentials
- C) Brainstem auditory evoked potentials
- D) All of the above

**18 . Which of the following signs/symptoms should raise suspicion that a condition other than MS is the underlying cause?**

- A) Progressive from onset
- B) Lack of peripheral symptoms

- C) Abnormal neurologic examination
- D) MRI abnormalities in multiple locations

**19 . Treatment of the acute exacerbations seen with the relapsing types of MS relies primarily on**

- A) interferons.
- B) corticosteroids.
- C) adrenocorticotrophic hormone (ACTH).
- D) Both B and C

**20 . The first-line treatment of an MS exacerbation is**

- A) 80–120 units ACTH for one to three weeks.
- B) IV methylprednisolone (1 g) for five to seven days.
- C) 44 mcg beta-interferon subcutaneously three times per week.
- D) 500–1,250 mg oral prednisone daily divided for three to seven days.

**21 . Plasmapheresis is indicated for patients with MS with**

- A) a malignant course.
- B) few current signs of disease.
- C) progressive (primary or secondary) course.
- D) severe relapses who have failed to respond to IV corticosteroids.

**22 . Beta-interferon 1b is administered at a dose of**

- A) 0.5 mg capsule daily.
- B) 20 mg subcutaneous injection daily.
- C) 30 mcg intramuscular injection weekly.
- D) 250 mcg subcutaneous injection every other day.

**23 . Which of the following is a possible side effect of glatiramer acetate?**

- A) Nausea
- B) Flu-like symptoms
- C) Injection-site reaction
- D) Gastrointestinal events

24 . Mitoxantrone is considered one of the most effective drugs in resolving MS relapses, but its use is limited by the risk for

- A) leukemia and cardiotoxicity.
- B) liver and thyroid dysfunction.
- C) injection site reactions and lipoatrophy.
- D) infusion-related hypersensitivity and anaphylaxis.

25 . Natalizumab acts by

- A) limiting cytokine secretion.
- B) inhibiting repair of myelin sheath lesions.
- C) modulating of oxidative pathways to decrease autoimmunity.
- D) preventing migration of auto-reactive lymphocytes into the brain.

26 . Which of the following drugs is approved for the treatment of highly active (or rapidly worsening) relapsing-remitting MS?

- A) Fingolimod
- B) Natalizumab
- C) Teriflunomide
- D) Mitoxantrone

27 . The drug of choice for the treatment of MS-related spasticity is

- A) baclofen.
- B) tizanidine.
- C) dantrolene.
- D) gabapentin.

28 . All of the following behavioral interventions are recommended for patients with MS and nocturia, EXCEPT:

- A) Avoiding alcoholic beverages
- B) Avoiding spicy and acidic foods
- C) Increasing caffeine consumption
- D) Decreasing fluid intake two to three hours prior to bedtime

29 . Among ambulatory men with MS, the most common type of sexual dysfunction is

- A) reduced libido.
- B) erectile dysfunction.
- C) orgasmic dysfunction.
- D) premature ejaculation.

**30 . Women with MS who are intending to conceive should**

- A) continue their treatment without pause.
- B) stop treatment for no more than one month prior to conception.
- C) be warned that pregnancy can dramatically worsen MS symptoms.
- D) stop treatment for at least three months prior to conception, if safe.