Ms. Itani is a 39 year old woman with diabetes mellitus type 1 and RRMS (first symptoms and diagnosis of CIS in December 2012, then RRMS in March 2013) on Avonex since January 2013. Her last visit was in July 2020 and she is presenting today for regular follow up.

Ms. Itani first developed symptoms in December 2012 when she experienced new onset, sudden loss of vision (90%) in the right eye that lasted for 2 weeks. A brain MRI showed an enhancing optic nerve lesion that was close to the chiasm. She was admitted to the hospital and received IV steroids for 6 days with complete resolution of symptoms. Her LP was inconclusive for OCBs and she was discharged home on PO prednisone with a diagnosis of CIS.

In January 2013, she started Avonex and was doing well and stable until March 2013 when she developed weakness in left forearm and hand of abrupt onset that lasted for 5 days and was self limited but she did not seek medical attention. Her diagnosis was changed to RRMS and was maintained on Avonex. She has been maintained on Avonex since with no new clinical or radiological disease activity.

She has constipation and requires Dulcolax to go to the bathroom. She also developed oral ulcers and saw a gastroenterologist and diagnosed her with gastric dysmotility secondary to her diabetes. She was started on Resolor but did not improve. She also has urinary urgency that did not resolve on Spasmex,

Previous workup:

- Brain and cervical/dorsal spine MRI with Gd (Dec 2012 at Doctor's Center): Abnormal signal involving the posterior third of the Rt optic nerve including the adjacent portion in the optic chiasm with enhancement seen. Linear area of abnormal signal in the Lt centrum semiovale reaching the adjacent ventricular contour. No lesions seen in the spine.

- CSF studies (Dec 2012 at outside center): WBCs 0, RBCs 685, Prot 0.35 g/L, Gluc 155 mg/dL, single faint band, IgG index 0.69

- EPs (Dec 2012 at outside center): Rt optic neuropathy (Lt P100 109ms, Rt P100 143ms). Normal BAERs.

- Blood studies (Dec 2012 at AUBMC): Normal/negative CBC, ESR, CRP, ACE, Brucella D+I, ANA, anti-DsDNA

- Vitamin D (Mar 2013 at AUBMC): 6.9 ng/ml

**Past MS Relapses**

December 2012: Rt optic neuritis

March 2013: LUE weakness

**Past Medical History**

Diabetes mellitus type 1

Hypothyroidism

**Current MS Medications**

Avonex 30mcg once per week IM started on January 2013

**Past MS Medications**

None

**Past Steroid Courses**

December 2012: Solumedrol 1g IV QD for 6 days

**MRI**

Brain

- Dec 2012 (with Gd, at first symptoms): Abnormal signal involving the posterior third of the Rt optic nerve including the adjacent portion in the optic chiasm with enhancement seen. Linear area of abnormal signal in the Lt centrum semiovale reaching the adjacent ventricular contour.

- July 2013 (with Gd, no comparison, Avonex baseline): Nonspecific foci in the genu of the Rt internal capsule and adjacent to the 4th ventricle.

- April 2015 (with Gd, compared to Dec 2012, on Avonex): Stable examination

- Nov 2016 (with Gd, compared to April 2015, on Avonex): Stable examination with very low lesion load

- Oct 2017 (without Gd, compared to Nov 2016, on Avonex): Stable examination

- August 2018 (without Gd, compared to Oct 2017, on Avonex): Stable examination

- August 2, 2019  (without Gd compared to August 2018, on Avonex): Stable examination

- June 16, 2020 (with Gd, compared to August 2019, on Avonex): Stable examination

Spine

- Dec 2012 (cervical/dorsal with Gd, at first symptoms): No evidence of lesions in the spine

- July 2013 (cervical/dorsal with Gd, no comparison, Avonex baseline): Normal examination

Add MS treatments

|  |
| --- |
| **Current Medications** |
|  Current Outpatient Medications: ∙ bisacodyl (DULCOLAX, BISACODYL,) 5 mg oral EC tablet, Take 10 mg by mouth 3 (three) times a week. Do not crush, chew, or split. , Disp: , Rfl: ∙ cholecalciferol 50,000 unit oral capsule, Take 1 capsule (50,000 Units total) by mouth per week., Disp: , Rfl: ∙ esomeprazole (NEXIUM) 40 mg oral tablet,delayed release (DR/EC), Take 40 mg by mouth 1 (one) time each day before breakfast., Disp: , Rfl: ∙ insulin degludec 100 unit/mL (3 mL) subQ cartridge, Inject 22 Units under the skin at bed time., Disp: , Rfl: ∙ insulin glulisine U-100 (Apidra SoloStar U-100 Insulin) 100 unit/mL inj syringe, Inject 5 Units under the skin 3 (three) times a day with meals., Disp: , Rfl: ∙ interferon beta-1a (Avonex) 30 mcg/0.5 mL pen injector, Inject 30 mcg into the shoulder, thigh, or buttocks per week., Disp: , Rfl: ∙ irbesartan-hydrochlorothiazide 150-12.5 mg oral per tablet, Take 1 tablet by mouth 1 (one) time each day., Disp: , Rfl: ∙ levothyroxine (EUTHYROX) 50 mcg oral tablet, Take 50 mcg by mouth 1 (one) time each day., Disp: , Rfl: ∙ mirabegron (Betmiga) 50 mg oral tablet extended release 24 hr, Take 50 mg by mouth 1 (one) time each day., Disp: , Rfl:  |

|  |
| --- |
| **Social History** |
|

|  |
| --- |
| **Social History** |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| Socioeconomic History |
| ∙ | Marital status: | Single |
|   |   | Spouse name: | None |
| ∙ | Number of children: | None |
| ∙ | Years of education: | None |
| ∙ | Highest education level: | Bachelor's degree (e.g., BA, AB, BS) |
| Occupational History |
| ∙ | Occupation: | Customer Service |
| Social Needs |
| ∙ | Financial resource strain: | None |
| ∙ | Food insecurity |
|   |   | Worry: | None |
|   |   | Inability: | None |
| ∙ | Transportation needs |
|   |   | Medical: | None |
|   |   | Non-medical: | None |
| Tobacco Use |
| ∙ | Smoking status: | Never Smoker |
| Substance and Sexual Activity |
| ∙ | Alcohol use: | No |
|   |   | Frequency: | Never |
| ∙ | Drug use: | None |
| ∙ | Sexual activity: | Never |
| Lifestyle |
| ∙ | Physical activity |
|   |   | Days per week: | None |
|   |   | Minutes per session: | None |
| ∙ | Stress: | None |
| Relationships |
| ∙ | Social connections |
|   |   | Talks on phone: | None |
|   |   | Gets together: | None |
|   |   | Attends religious service: | None |
|   |   | Active member of club or organization: | None |
|   |   | Attends meetings of clubs or organizations: | None |
|   |   | Relationship status: | None |
| ∙ | Intimate partner violence |
|   |   | Fear of current or ex partner: | None |
|   |   | Emotionally abused: | None |
|   |   | Physically abused: | None |
|   |   | Forced sexual activity: | None |
| Other Topics | Concern |
| ∙ | None |
| Social History Narrative |
| ∙ | None |

 |

***III.Symptoms, Medications, and MSFC at Multiple Sclerosis Visit***

Symptoms, Medications and MSFC at Multiple Sclerosis Visit: Review of MS symptoms:

Ambulation:: Unrestricted

Urinary Symptoms: (Frequency)

Urinary incontinence: None

Bowel Symptoms: (Constipation)

Stools incontinence: None

Fatigue: None

Depression: None

Spasticity: None

Pain: None

Pain Scale Used: Verbal Descriptive Scale

Pregnant:: No

Planning any conception?: No

If Post Partum, currently breastfeeding?: No

Currently on Vit D at Visit?: Present

If Yes, Vit D dose: 50k/w

Current use of Antidepressants: None

Current use of medications for neurogenic bladder: Present

Current use of medications for spasticity: None

Current use of medications for neuropathic pain: None

Current use of medications for fatigue: None

25 Foot Walk

25 Foot Walk (in seconds): 4.1

Any assisting device used?: None

SDMT

SDMT: Original form?: No

SDMT: Which form?: 1

SDMT Numerator: 43

SDMT Denominator: 43

9 Hole Peg Test

Which is your dominant hand?: Right

Dominant (in Seconds): 16.8

Non-Dominant (in Seconds): 19

Visual Acuity

R Near: 20/20

L Near: 20/20

***IV.Para-clinical tests at Multiple Sclerosis Visit***

Normal CBC and LFTs (Dec 2020)

***V.Physical Examination at Multiple Sclerosis Visit***

Vital signs:

**Vital Signs**

|  |  |
| --- | --- |
| BP | 126/60 (BP Location: Right arm) |
| Pulse | 87 |
| Temp | 36.9 °C (Oral) |
| Resp | 16 |
| Ht | 159 cm |
| Wt | 57 kg |
| SpO2 | 100% |
| BMI | 22.55 kg/m² |
| Smoking Status | Never Smoker |
| BSA | 1.59 m² |

Physical Exam

Neurological Exam

**VI.Neurological examination: EDSS synopsis of FS scores**

**EDSS 2**

Synopsis of FS Scores

1.Visual: 0

2.Brainstem: 0

3.Pyramidal: 1

4.Cerebellar: 0

5.Sensory: 2

6.Bowel/Bladder: 1

7.Cerebral: 0

8.Ambulation: 0

**1. VISUAL (OPTIC) FUNCTIONS**

|  |  |  |  |
| --- | --- | --- | --- |
| OPTIC FUNCTIONS | OD | OS |   |
| Visual acuity | 20/20 | 20/20 |   |
| Visual fields | 0 | 0 |   |
| Scotoma | 0 | 0 |   |
| Disc Pallor | 0 | 0 |   |
| Pupils (APD) | 0 | 0 |   |
| Anisocoria | 0 | 0 |   |

**FUNCTIONAL SYSTEM SCORE**1.Visual: 0

**2. BRAINSTEM FUNCTIONS**

|  |  |  |  |
| --- | --- | --- | --- |
| CRANIAL NERVES EXAM |   | Hearing loss | [ 0 ] |
| Extraocular movements (EOM) impairment | [ 0 ] | Dysarthria | [ 0 ] |
| Nystagmus | [ 0 ] | Dysphagia | [ 0 ] |
| Trigeminal damage | [ 0 ] | Other cranial nerve functions | [ 0 ] |
| Facial weakness | [ 0 ] | **FUNCTIONAL SYSTEM SCORE** | 2.Brainstem: 0  |

**3. PYRAMIDAL FUNCTIONS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| REFLEXES | RIGHT | LEFT | LIMB STRENGTH | RIGHT | LEFT |
| Biceps | 2 | 2 | Deltoids | 5 | 5 |
| Triceps | 2 | 2 | Biceps | 5 | 5 |
| Brachioradialis | 2 | 2 | Triceps | 5 | 5 |
| Knee | 1 | 1 | Wrist/finger flexors | 5 | 5 |
| Ankle | 1 | 1 | Wrist/finger extensors | 5 | 5 |
| Plantar response | 2 | 2 | Hip flexors | 5 | 5 |
| Cutaneous reflexes |   |   | Knee flexors | 5 | 5 |
| \*Palmomental reflex |   |   | Knee extensors | 5 | 5 |
|   |   |   | Plantar flexion (feet/toes) | 5 | 5 |
|   |   |   | Dorsiflexion (feet/toes) | 5 | 5 |
|   |   |   | \* Position test UE, pronation | 0 | 0 |
| SPASTICITY | RIGHT | LEFT | \* Position test UE, downward drift |   |   |
| Arms | 0 | 0 | \* Position test LE, sinking |   |   |
| Legs | 0 | 0 | Able to lift only one leg at a time |   |   |
| Gait | 0 | 0 | \* Walking on heels |   |   |
|   |   |   | \* Walking on toes |   |   |
|   |   |   | \* Hopping on one foot |   |   |

**FUNCTIONAL SYSTEM SCORE**3.Pyramidal: 0

**4. CEREBELLAR FUNCTIONS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Head tremor | [ 0 ] |   | RIGHT | LEFT |
| Truncal ataxia | [ 0 ] | Tremor/dysmetria UE | 0 | 0 |
| Tandem walking | [ 0 ] | Tremor/dysmetria LE | 0 | 0 |
| Gait ataxia | [ 0 ] | Rapid alternating movements UE impairment | 0 | 0 |
| Romberg test | [ 0 ] | Rapid alternating movements LE impairment |   |   |
| Other | [ 0 ] |   |   |   |

**FUNCTIONAL SYSTEM SCORE**4.Cerebellar: 0

**5. SENSORY FUNCTIONS:**

|  |  |  |  |
| --- | --- | --- | --- |
|   | RIGHT | LEFT |   |
| Superficial sensation UE | 0 | 0 |   |
| Superficial sensation trunk | 0 | 0 |   |
| Superficial sensation LE | 0 | 0 |   |
| Vibration sense UE | 1 | 0 |   |
| Vibration sense LE | 1 | 1 |   |
| Position sense UE | 0 | 0 |   |
| Position sense LE | 0 | 0 |   |
| \* Lhermitte’s sign |   |   |   |
| \* Paraesthesiae UE |   |   |   |
| \* Paraesthesiae trunk |   |   |   |
| \* Paraesthesiae LE |   |   |   |

**FUNCTIONAL SYSTEM SCORE**5.Sensory: 2

**6. BOWEL/ BLADDER FUNCTIONS:**

|  |  |  |
| --- | --- | --- |
| Urinary hesitancy/retention | [ 0 ] |   |
| Urinary **urgency**/incontinence | [ 1 ] |   |
| Bladder catheterization | [ 0 ] |   |
| Bowel dysfunction | [ 0 ] |   |
| \* Sexual dysfunction | [ ] |   |

**FUNCTIONAL SYSTEM SCORE**6.Bowel/Bladder: 1

**7. CEREBRAL FUNCTIONS:** MENTAL STATUS EXAMINATION

|  |  |  |
| --- | --- | --- |
| +Depression | [ ] |   |
| +Euphoria | [ ] |   |
| Decrease in mentation | [ 0 ] |   |
| +Fatigue | [ ] |   |

**FUNCTIONAL SYSTEM SCORE**7.Cerebral: 0

**8. AMBULATION:**

|  |  |  |
| --- | --- | --- |
| 0 – Unrestricted | [ X ] |   |
| 1 – Fully ambulatory | [  ] |   |
| 2 – ≥300m, but <500m without help or assistance | [  ] |   |
| 3 – ≥200m, but <300m without help or assistance | [  ] |   |
| 4 – ≥100m, but <200m without help or assistance | [  ] |   |
| 5 – Walking range <100m without assistance | [  ] |   |
| 6 – Unilateral assistance ≥50m | [  ] |   |
| 7 – Bilateral assistance ≥120m | [  ] |   |
| 8 – Unilateral assistance <50m | [  ] |   |
| 9 – Bilateral assistance ≥5m but <120m | [  ]  |   |
| 10 – Uses wheelchair without help; unable to walk 5m even with aidEssentially restricted to wheelchair; wheels self and transfers aloneUp and about some 12 hours a day | [  ]  |   |
| 11 – Uses wheelchair with help; unable to take more than a few steps;Restricted to wheelchairMay need some help in transferring and wheeling self | [  ]  |   |
| 12 – Essentially restricted to bed or chair or perambulated in wheelchairOut of bed most of day; retains many self-care functionsGenerally has effective use of arms | [  ]  |   |
| X – Bed ridden | [  ]  |   |

Actual distance (obligatory up to 500 m if possible)

|  |  |  |
| --- | --- | --- |
| Unassisted | [ ] |   |
| Unilateral assistance | [ ] |   |
| Bilateral assistance | [ ] |   |
| Other | [ ] |   |

\* = optional
1 = converted FS Score
+ Because depression, euphoria and fatigue are difficult to evaluate objectively, in some studies it does not contribute to the Cerebral FS score or EDSS step.

8.Ambulation: 0

***VII. Impression/Plan at Multiple Sclerosis Visit***

Ms. Rana Itani is a 38 year old woman with diabetes mellitus type 1 and RRMS (first symptoms and diagnosis of CIS in December 2012, then RRMS in March 2013) on Avonex since January 2013. Patient is clinically stable. Her urinary symptoms are better controlled on Betmiga so we will continue the same therapy plan on Avonex with routine blood tests every 6 months and brain MRI yearly (due June 2021).

The encounter diagnosis was Relapsing-remitting multiple sclerosis not responding to Steroids-à Avonex-àFingolimod -à Rituximab since June 2023.