Guillain-Barre Syndrome

The Triumphs and Defeats of Mr. H

Molly Wheatley
Case presentation
June 4th, 2012
Outline

• Mr. H-
  ▫ Demographics
  ▫ Medical history
  ▫ Personality
• Guillain-Barre
• Nutrition Assessment
• Medical Nutrition Therapy
• Outcome
• Discussion
Mr. H

- 72 yr old Male
- Originally from Hawaii but was residing in Corvallis, Oregon at onset of disease.
- Retired pipe fitter for musical organs
- Lives independently with assistance from friends and neighbors on occasion. Partner past away 1 1/2 years ago.
- No history of smoking, alcohol or drug abuse.
- Complex Medical History
Past Medical History

- Diabetes (Rx induced)
- Guillain- Barre Syndrome
- PICC line infection
- C-diff, colitis
- Renal transplant x 2, d/t polycystic kidney disease (OHSU 2005)
- Depression
- HTN
- Neutropenia
- Thrombocytopenia
- Pacemaker
- Basal Squamous cell cancer w/ excision of skin cancer
- Osteoporosis
- CVA
- Idopathic thrombocytopenic purpura (ITP)
Guillain-Barre Syndrome (GBS)

• AKA: Acute Peripheral Neuropathy

• Autoimmune disease which causes the immune system to attack the peripheral nervous system.

Clinical Subtypes:

• Acute inflammatory demyelinating polyneuropathy – Most common 85-90% of cases
• Acute motor axonal neuropathy – common in China and Japan
• Acute motor and sensory axonal neuropathy
• Miller Fisher syndrome – presents with visual impairment, ataxia & areflexia
Autonomic NS – Controls smooth muscle of the viscera (organs) and glands
  • Sympathetic – allows body to function under stress
  • Parasympathetic - control vegetative function.
Somatic NS - The somatic nervous system consists of peripheral nerve fibers that send sensory information to the central nervous system and motor nerve fibers that project to skeletal muscle.
Symptoms

- Limb numbness that progresses throughout the body over matter of days
- Loss of tendon reflexes
- With immediate medical attention paralysis will reach a plateau after 2-4 weeks and can gradually resolve with medication and physical therapy.
Causes

- Bacterial or viral infection: 60-70% cases
  - *Campylobacter jejuni*
  - *Cytomegalovirus,*
  - Epstein-Barr virus
  - *Mycoplasma pneumoniae*

- Vaccinations
Treatments

• Plasma exchange

• High-Dose Immunoglobulin (IVIg)

• Corticosteroids
  ▫ Multidisciplinary care – Neurologist, PT, OT, Nutrition, nursing ......
GBS statistics

• Annual incidence: 1:3: 100,000 world wide

• Need for mechanical ventilation: 25-33%

• Mortality rate: 5-10%
Admission to Skilled Nursing: 3/28

- AKI
- C-diff
- Adjustment Disorder with depressed mood
- GBS
- Rehabilitation- GBS
- Reason for Nutrition consult: Poor P.O. intake and multiple therapeutic diets and nutrition supplements.
Transfer to ED : 4/6 Day 8

- Nursing reported pt was not responding to care and they were worried he might have had a serious medical issue that needed to be addressed.

Dx from Salem Hosp. ED
- Anemia-
  - Hgb reference range: 14-18 g/L
  - Pt Hgb 4/6 - 5.5

Tx
- Iron Transfusion
- Iron studies ordered
4/7 Transferred back to Skilled Nursing Facility to continue care
The Omnibus Budget Reconciliation Act of 1987 (OBRA 1987)

• Mandated that all nursing home care facilities provide necessary care and services to maintain/improve well being of residents.

Resident Assessment Instrument

Assessment (MDS) → Decision-Making (CAA) → Care Plan Development → Care Plan Implementation → Evaluation
Minimal Data Set (MDS)

- Screening tool to assess nursing home residents and develop an individualized care plan
  - Care Area Assessment
    - Section K = food and nutrition related
<table>
<thead>
<tr>
<th>Care Area Assessment</th>
<th>Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Delirium</td>
<td>11. Falls</td>
</tr>
<tr>
<td>5. Activity of Daily Living (ADL) Functional / Rehabilitation Potential</td>
<td>15. Dental Care</td>
</tr>
<tr>
<td>6. Urinary Incontinence and Indwelling Catheter</td>
<td>16. Pressure Ulcer</td>
</tr>
<tr>
<td>7. Psychosocial Well-Being</td>
<td>17. Psychotropic Medication Use</td>
</tr>
<tr>
<td>8. Mood State</td>
<td>18. Physical Restraints</td>
</tr>
<tr>
<td>10. Activities</td>
<td>20. Return to Community Referral</td>
</tr>
</tbody>
</table>
Section K CAA Assessment- 4/10 day 12

Current wt: 166#       Admit Wt: 175.8
Wt Δ 1 wk: - 9.8# (5.6%)
IBW: 160# (103%)
Ht: 69”
BMI: 24.5
StatedUBW: 180

Diet Order: No added salt, Consistent carbohydrate
Average % intake: 75%
Assessment cont.

Wounds: L elbow, Achilles area

GI: Chronic Diarrhea x 2 weeks

Summary: Pt. irritable, angry and frustrated with medical care. Adamantly refuses all therapeutic diets and supplements. Edema in LLE and LUE. Attempted multiple times to encourage renal/DM diet. Pt continues to refuse and states “he knows what to do!” Will liberalize diet and continue to monitor.
Full Assessment- 4/18 Day 20

Wt: 156#
Wt. Δ in 1 month = - 20# (11%)

<table>
<thead>
<tr>
<th>Nutrition Requirements</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kcal (Mifflin St-Jeor)</td>
<td>1600-1700 kcal/day (22.5-24 kcal/kg)</td>
</tr>
<tr>
<td>Protein 1-1.1 g/kg</td>
<td>70-80 g (1-1.13 g/kg)</td>
</tr>
<tr>
<td>Fluid (kg-20) x 50 + 1500</td>
<td>2200-2300 ml</td>
</tr>
</tbody>
</table>

- Energy needs were based on EAL recommendations for spinal cord injuries. It is suggested that energy needs are 10% less due to paralysis.
- In the absence of pressure ulcers the EAL recommends .8-1 g of protein per kg of body weight.
P.O Intake

• Intake: No data of actual meal intake but noted % meal consumed. Multiple days with refusal of meals or ≤ 25%.

• Eating Ability: Independent, no problems chewing/swallowing or pocketing food.
Diet History

Breakfast & Lunch: McDonalds

Dinner: Cooks for himself usually chicken 3-4 days/wk with starch and vegetable. Joined friends or neighbors for dinner 2-3 day/wk.

Not a snacker
## Medication List

<table>
<thead>
<tr>
<th>Drug</th>
<th>Indication for use</th>
<th>Food/Med Interaction</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tylenol</td>
<td>Pain management</td>
<td>Caffeine increases abs.</td>
<td>Caution w/ decrease hepatic function</td>
</tr>
<tr>
<td>Xanax</td>
<td>Antianxiety</td>
<td>Limit caffeine</td>
<td>decrease wt, increase appetite, drowsiness, fatigue</td>
</tr>
<tr>
<td>Ducolax</td>
<td>Stool softener</td>
<td>High fiber w/ 1500-200 ml fluid/day</td>
<td>Bitter taste, throat irritation, nausea</td>
</tr>
<tr>
<td>Senna</td>
<td>Laxative</td>
<td>High fiber w/ 1500-200 ml fluid/day</td>
<td>Electrolyte imbalance w/ excessive use. Nausea, cramps</td>
</tr>
<tr>
<td>Tums</td>
<td>Antacid</td>
<td>Take sep. high fiber foods</td>
<td>decreases diarrhea</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>Pain management</td>
<td>Take with food</td>
<td>Anorexia, dry mouth, n/v, constipation</td>
</tr>
<tr>
<td>Neupogen</td>
<td>Increase production of neutrophils</td>
<td>-</td>
<td>Bone pain, splenomegaly, nosebleed</td>
</tr>
</tbody>
</table>
## Meds cont.

<table>
<thead>
<tr>
<th>Drug</th>
<th>Indication for use</th>
<th>Food/Med Interaction</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prozac</td>
<td>antidepressant</td>
<td>Take w/ meals</td>
<td>Anorexia, dry mouth, dyspepsia, N/V, diarrhea</td>
</tr>
<tr>
<td>Prograf</td>
<td>Immunosuppressant</td>
<td>Avoid K and salt subs</td>
<td>Anorexia, increased appetite, decrease Fe. n/v/d/c. flatulence, abdominal pain</td>
</tr>
<tr>
<td>Flagyl</td>
<td>Antibiotic</td>
<td>Take w/ food</td>
<td>Anorexia, metallic taste, diarrhea, epigastric distress</td>
</tr>
<tr>
<td>Rapamune</td>
<td>Immune suppressant</td>
<td></td>
<td>Stomach pain, n/d/c</td>
</tr>
<tr>
<td>Novolog – rapid acting bolus</td>
<td>antidiabetic</td>
<td>-</td>
<td>Low blood sugar</td>
</tr>
<tr>
<td>Lantus – long acting basal once daily</td>
<td>antidiabetic</td>
<td>-</td>
<td>Low blood sugar</td>
</tr>
<tr>
<td>Metoprolol</td>
<td>Antihypertensive</td>
<td>Avoid nat. licorice</td>
<td>diarrhea</td>
</tr>
</tbody>
</table>
Vitamin/Minerals

- K-Phos-neutral
- Mag-Ox
- Vitamin D
- Vitamin E
- Multivitamin
<table>
<thead>
<tr>
<th>Lab</th>
<th>Ref. Range</th>
<th>4/2</th>
<th>4/7</th>
<th>4/16</th>
<th>4/17</th>
<th>4/27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucose</td>
<td>70-100 mg/dl</td>
<td>--</td>
<td>--</td>
<td>135 H</td>
<td>--</td>
<td>157 H</td>
</tr>
<tr>
<td>BUN</td>
<td>7-23 mg/dl</td>
<td>24 H</td>
<td>13</td>
<td>23</td>
<td>--</td>
<td>22</td>
</tr>
<tr>
<td>Creat</td>
<td>0.6-1.3 mg/dl</td>
<td>1.4 H</td>
<td>1</td>
<td>1.3</td>
<td>--</td>
<td>1.2</td>
</tr>
<tr>
<td>GFR</td>
<td>60-75 mL/min</td>
<td>--</td>
<td>--</td>
<td>140</td>
<td>--</td>
<td>63</td>
</tr>
<tr>
<td>Na</td>
<td>135-145 mEq/L</td>
<td>141</td>
<td>140</td>
<td>140</td>
<td>--</td>
<td>140</td>
</tr>
<tr>
<td>K</td>
<td>3.6-5 mEq/L</td>
<td>3.5 L</td>
<td>3.8</td>
<td>3.7</td>
<td>--</td>
<td>4.1</td>
</tr>
<tr>
<td>Ca</td>
<td>8.4-10.5 mg/dl</td>
<td>--</td>
<td>7.9 L</td>
<td>8.9</td>
<td>--</td>
<td>9.0</td>
</tr>
<tr>
<td>Alb</td>
<td>3.2-5.5 gm/dl</td>
<td>2.2 L</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>2.9 L</td>
</tr>
<tr>
<td>Hgb</td>
<td>14-18 gm/L</td>
<td>--</td>
<td>5.5 L</td>
<td>10.1 L</td>
<td>10.9 L</td>
<td>--</td>
</tr>
<tr>
<td>Hct</td>
<td>32-52%</td>
<td>--</td>
<td>--</td>
<td>30 L</td>
<td>33.7 L</td>
<td>--</td>
</tr>
<tr>
<td>MCV</td>
<td>80.0-94.0 fl</td>
<td>--</td>
<td>--</td>
<td>85.6 L</td>
<td>85.4</td>
<td>--</td>
</tr>
<tr>
<td>RBC</td>
<td>M: 4.7-6.1</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>3.99 L</td>
<td>--</td>
</tr>
</tbody>
</table>
Rehabilitation

• Occupational therapy- 2 # wts bicep curls x 10 reps daily.

• Physical Therapy- strength for standing with the goal of walking.

• Recreation- Pt. not at all interested
Nutrition Focused Physical Findings

- Temples: Depressed
- Orbital fat pad: sunken in and dark in color
- Clavicles: protruding & very prominent
  - Prominent sternum and xiphoid process per pt
- Triceps skin fold: excess skin, very thin
- Upper extremities: prominent elbows
- Lower extremities: protruding tibia
  - Noted left leg hemotoma of unknown origin
- Noted severe to moderate fluid accumulation upon admit to skilled nursing but had resolved at the time of physical exam.
<table>
<thead>
<tr>
<th>ICD-9 Code: 262 Other Severe Protein-Calorie Malnutrition</th>
<th>Severe Malnutrition in context of Acute Illness/Injury</th>
<th>Severe Malnutrition in context of Chronic Illness</th>
<th>Severe Malnutrition in the context of Social/Environmental Circumstances</th>
</tr>
</thead>
</table>
| Weight Loss - is evaluated in light of other clinical findings including hydration. Weight change over time is reported as a percentage of weight lost from baseline. | Weight Loss  
> 2% in 1 week  
> 5% in 1 month  
> 7.5% in 3 months | Weight Loss  
> 5% in 1 month  
> 7.5% in 3 months  
> 10% in 6 months  
> 20% in 12 months | Weight Loss  
> 5% in 1 month  
> 7.5% in 3 months  
> 10% in 6 months  
> 20% in 12 months |
| Intake - RD obtains diet history and estimates energy needs. Suboptimal intake is determined as a percentage of estimated needs over time. | Energy Intake  
≤ 50% energy intake compared to estimated energy needs for ≥ 5 days | Energy Intake  
≤ 75% energy intake compared to estimated energy needs for ≥ 1 month | Energy Intake  
≤ 50% energy intake compared to estimated energy needs for ≥ 1 month |
| Physical Assessment – loss of subcutaneous fat i.e. orbital, triceps, fat overlying ribcage. | Body Fat  
Moderate depletion | Body Fat  
Severe depletion | Body Fat  
Severe depletion |
| Physical Assessment – loss of muscle i.e. temples, clavicles, shoulders, scapula, thigh & calf | Muscle Mass  
Moderate depletion | Muscle Mass  
Severe depletion | Muscle Mass  
Severe depletion |
| Physical Assessment – general or local fluid accumulation i.e. extremities, ascites or vulvar/scrotal edems | Fluid Accumulation  
Moderate to Severe | Fluid Accumulation  
Severe | Fluid Accumulation  
Severe |
| Functional Assessment – based on standards supplied manufacturer of dynamometer | Reduced Grip Strength  
_Not recommended in Intensive Care Setting_ | Reduced Grip Strength  
Measurably reduced for age and gender | Reduced Grip Strength  
Measurably reduced for age and gender |

Malnutrition/Definitions/Adult Malnutrition Criteria 10.17.11. detail added per nutrition committee meeting 12/15/2011 adapted from references provided by Providence Health & Services, New York Thoracic and ADA Wound Care Manual.
Weight Trend

Weight in #

Dates 4/1 - 4/29

Graph showing a downward trend in weight from 4/1 to 4/29.
Diagnosis & Intervention

PES:
Inadequate oral intake related to pts refusal of meals and severely depressed mood as evidenced by wt. loss of 20# in 1 month.
Nutrition Goals

1.) Short term: Meet 100% of protein (70-80 g) and calorie (1600-1700 kcal) needs for wound healing and wt. gain.

2.) Long term: Weight maintenance
Monitor and Evaluation

Indicators: Total energy intake, weight

Criteria: Energy intake > 75% and wt. changes not significant by next assessment.
My Personal Intervention with Mr. H

• Daily greetings and encouragement for food intake. Assistance with selecting menu items to order for the next meal.

• Biweekly monitoring of pts wellbeing

• After 2 weeks he agreed to eat a Health Shake mixed in with chocolate ice cream at lunch & dinner.
  ▪ ~700 additional calories and 20 g of protein
Outcomes

• Eating ≥ 75% of meals 3x per day

• Walk 80 feet 2 x per day

• Drastic mood change and improved motivation to recover.

• Pt eating meals in dining room and socializing with other residents!!!
References

6. Providence Health & Services Guidelines Adapted from ASPEN/AND Adult Malnutrition Clinical Characteristics