Genetics and Precision Medicine Department
King Abdullah Specialized Children's Hospital (KASCH)
King Abdulaziz Medical City – Riyadh

Protocol for Immune Tolerance Induction for CRIM Negative Pompe Patients in the Naïve Setting

Prof. Majid Alfadhel MD, MHSc, FCCMG

Hiba Moubayed Pharm. D.

Reviewed by:

Genetics and Precision Medicine team members

Timeline

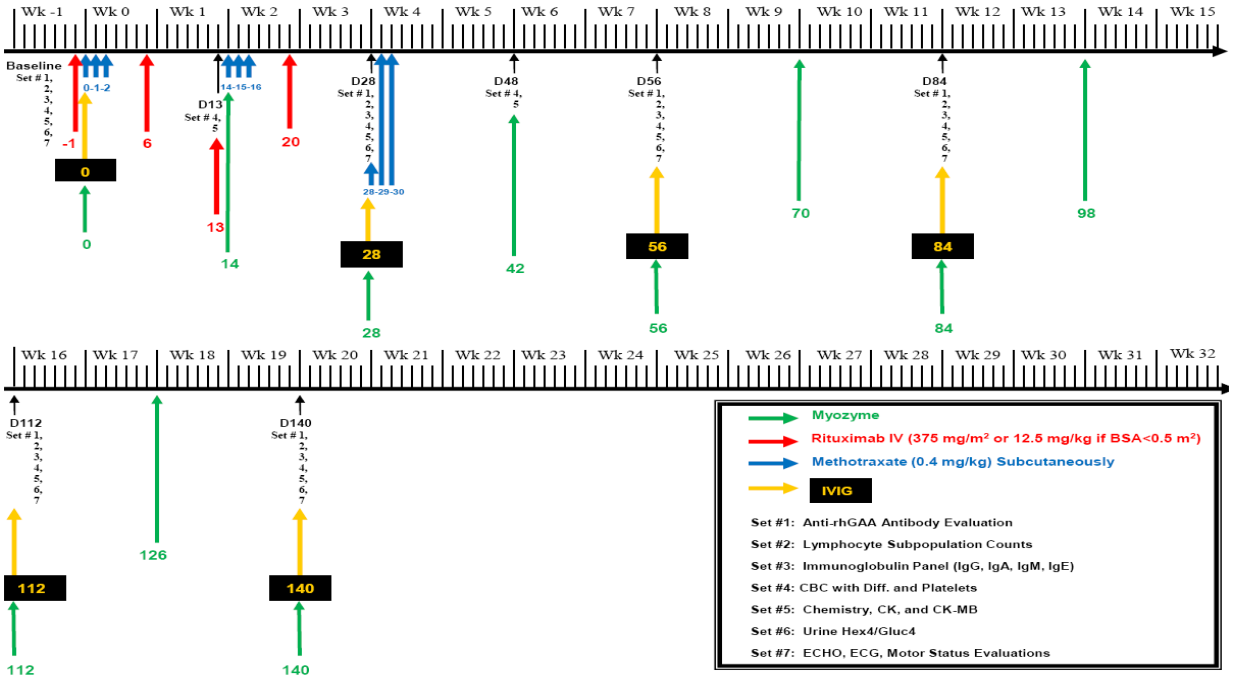
- **Myozyme:** Days 0, 14, 28, 42, 56, 70, 84, 98, 112, 126, 140
  - Give every two weeks, unless clinical status and IARs require more administration (see MZM slide)

- **Rituximab:** Days -1, 6, 13, 20
  - Give four doses over 4 weeks

- **Methotrexate:** Days 0, 1,2,14,15,16, 28, 29, 30
  - Give for three consecutive days (1 cycle) every 2 weeks for three cycles.
  - Methotrexate needs to be administered 1 hour to Myozyme infusion on Day 0, 14 and 28.

- **IVIG*:** Days 0, 28, 56, 84, 112, 140
  - *Can be given more or less frequently depending upon immunoglobulin levels, CD19 levels, and clinical status

- **Additional notes:**
  - Changes may be made based on clinical status and antibody titers
  - IVIG can be delayed one day, if concerned with volume given in a single day. Also, IVIG can be given more often if indicated clinically.



Day (-1)

Baseline investigations: (note: this Lab results are important to monitor SE of your medications)

- Set 1: Anti-rhGAA Antibody Evaluation
- Set 2: Lymphocyte Subpopulation Counts (CD3, CD4, CD8, CD19)
  - Monitor for vaccination (vaccinate only after CD19 recovery)
- Set 3: Immune Status/Immunoglobulin Panel (IgG, IgA, IgM, IgE)
  - Monitor for recovery status (when needed) with diphtheria and tetanus toxoid antibody titers
  - Monitor for IVIG administration
- Set 4: Hematology (CBC with differential, Platelets)
  - Monitor platelet counts for less than 50,000/mm^3
  - Monitor neutrophil counts for less than 500/mm^3
  - Monitor for infections resistant to treatment

- Set 5: Chemistry (ALT, AST, CK, CK-MB)
    - Monitor CK and CK-MB for increases greater than 2x baseline result
    - Monitor AST and ALT for increases greater than 3x baseline result
- Set 6: Urine Oligosaccharides (Hex4/Gluc4).

Day (-1):

Rituximab IV

- Dose: 375 mg/m²/dose IV; if BSA is lesser than 0.5 m², give 12.5 mg/kg IV.
- Weight _____kg, height _____cm, BSA_____
- Calculated dose _____mg.
- Dilution Range: 1 - 4 mg/mL. (Total volume will depend on dilution chosen)
- Dilution preferred_____, total volume _____ml.

- Infusion rate: 1 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
  2 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
  3 mg/kg/hr until complete: _____mg/hr, _____ml/hr.

- **Premedications may include:**
    - Acetaminophen (10-15 mg/kg) PO; _____ mg PO.
    - Diphenhydramine (1mg/kg) IV; _____mg IV.
    - Methylprednisolone (1mg/kg) IV; _____ mg IV.
    - Granisetron (10 mcg/kg) IV; _____mcg IV

SE: infusion related reactions (i.e. hives, itching, swelling of lips, tongue, throat or face, sudden cough, difficulty breathing, weakness, dizziness, palpitations and chest pain), chills, infections, body aches, tiredness, and low white blood cells**.**

Nursing:

- Monitor vital signs Q _____ min.
- Call MD if any side effect develops.

Day (0): Methotrexate, Myozyme®, IVIG

- **Methotrexate: (dose 1 of cycle 1)**

To be given 1 hour prior to Myozyme®.
Given in cycles, each cycle is 3 consecutive days.

- Dose: 0.4 mg/kg SC or PO once.
- Weight _____kg; calculated dose: _____mg; route_____.

Premedications may include:

- Acetaminophen (10-15 mg/kg) PO;_____ mg PO.
- Granisetron (10 mcg/kg) IV; _____mcg IV.

SE: ulcerative stomatitis, leukopenia, nausea, abdominal distress, malaise, undue fatigue, chills and fever, dizziness, and decreased resistance to infection.

Hold dose for ANC less than 750 OR liver function tests (LFTs) greater than 5x normal.

- **Myozyme®: Alglucosidase alfa.**

  - Dose: 20mg/kg IV.
  - Weight: _____kg: calculated dose _____mg IV.
  - Dilution Range: 0.5 - 4mg/ml. (Total volume will depend on dilution chosen)
  - Dilution preferred_____, total volume _____ml.

Special Precautions:

- **Stable only in Normal Saline.**
- The diluted Myozyme® solution should be filtered through a 0.2 µm, low protein-binding, in-line filter during administration to remove any visible particles.

Infusion rate:

- 1 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 3 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 5 mg/kg/hr x 30 min: _____mg/hr, _____ml/hr.
- 7 mg/kg/hr until complete _____mg/hr, _____ml/hr.

Nurses: Monitor vital signs during (prior to each rate increase) and up to 1 hour following infusion. If abnormal, contact the physician to decrease the rate or temporarily hold the Myozyme® infusion.

SE: anaphylaxis and allergic reactions, risk of acute cardiorespiratory failure, risk of cardiac arrhythmia and sudden cardiac death during general anesthesia for central venous catheter placement, infusion reactions, and immune mediated reactions.

- **IVIG:**
  - Dose: 400 - 500 mg/kg.
  - Weight: _____ kg, calculated dose: _____mg.
  - Please follow the nursing instructions and the infusion rate as per the "IVIG protocol for Pediatrics" found in the Hospital IV manual.

Day (1): Methotrexate

- **Methotrexate: (dose 2 of cycle 1)**

  - Dose: 0.4 mg/kg SC or PO once.
  - Weight _____kg; calculated dose: _____mg; route_____.

Premedications may include:

- Acetaminophen (10-15 mg/kg) PO;_____ mg PO.
- Granisetron (10 mcg/kg) IV; _____mcg IV.

SE: ulcerative stomatitis, leukopenia, nausea, abdominal distress, malaise, undue fatigue, chills and fever, dizziness, and decreased resistance to infection.

Hold dose for ANC less than 750 OR liver function tests (LFTs) greater than 5x normal.

Day (2): Methotrexate

- **Methotrexate: (dose 3 of cycle 1)**

  - Dose: 0.4 mg/kg SC or PO once.
  - Weight _____kg; calculated dose: _____mg; route_____.

Premedications may include:

- Acetaminophen (10-15 mg/kg) PO;_____ mg PO.
- Granisetron (10 mcg/kg) IV; _____mcg IV.

SE: ulcerative stomatitis, leukopenia, nausea, abdominal distress, malaise, undue fatigue, chills and fever, dizziness, and decreased resistance to infection.

Hold dose for ANC less than 750 OR liver function tests (LFTs) greater than 5x normal.

Day (6):

Rituximab IV

- Dose: 375 mg/m²/dose IV; if BSA is lesser than 0.5 m², give 12.5 mg/kg IV.
- Weight _____kg, height _____cm, BSA_____
- Calculated dose _____mg.
- Dilution Range: 1 - 4 mg/mL. (Total volume will depend on dilution chosen)
- Dilution preferred_____, total volume _____ml.

- Infusion rate: 1 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
  2 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
  3 mg/kg/hr until complete: _____mg/hr, _____ml/hr.

- **Premedications may include:**
  - Acetaminophen (10-15 mg/kg) PO; _____ mg PO.
  - Diphenhydramine (1mg/kg) IV; _____mg IV.
  - Methylprednisolone (1mg/kg) IV; _____ mg IV.
  - Granisetron (10 mcg/kg) IV; _____mcg IV

SE: infusion related reactions (i.e. hives, itching, swelling of lips, tongue, throat or face, sudden cough, difficulty breathing, weakness, dizziness, palpitations and chest pain), chills, infections, body aches, tiredness, and low white blood cells**.**

Nursing:

- Monitor vital signs Q _____ min.
- Call MD if any side effect develops.

Day (13):

Repeat investigations: (note: this lab results are important to monitor SE of your medications)

- Set 4: Hematology (CBC with differential, Platelets)
  - Monitor platelet counts for less than 50,000/mm^3
  - Monitor neutrophil counts for less than 500/mm^3
  - Monitor for infections resistant to treatment

- Set 5: Chemistry (ALT, AST, CK, CK-MB)
  - Monitor CK and CK-MB for increases greater than 2x baseline result
  - Monitor AST and ALT for increases greater than 3x baseline result

Day (13):

Rituximab IV

- Dose: 375 mg/m²/dose IV; if BSA is lesser than 0.5 m², give 12.5 mg/kg IV.
- Weight _____kg, height _____cm, BSA_____
- Calculated dose _____mg.
- Dilution Range: 1 - 4 mg/mL. (Total volume will depend on dilution chosen)
- Dilution preferred_____, total volume _____ml.

- Infusion rate: 1 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
  2 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
  3 mg/kg/hr until complete: _____mg/hr, _____ml/hr.

- **Premedications may include:**
  - Acetaminophen (10-15 mg/kg) PO; _____ mg PO.
  - Diphenhydramine (1mg/kg) IV; _____mg IV.
  - Methylprednisolone (1mg/kg) IV; _____ mg IV.
  - Granisetron (10 mcg/kg) IV; _____mcg IV

SE: infusion related reactions (i.e. hives, itching, swelling of lips, tongue, throat or face, sudden cough, difficulty breathing, weakness, dizziness, palpitations and chest pain), chills, infections, body aches, tiredness, and low white blood cells**.**

Nursing:

- Monitor vital signs Q _____ min.
- Call MD if any side effect develops.

Day (14): Methotrexate, Myozyme®

- **Methotrexate: (dose 1 of cycle 2)**

To be given 1 hour prior to Myozyme®.
Given in cycles, each cycle is 3 consecutive days.

- Dose: 0.4 mg/kg SC or PO once.
- Weight _____kg; calculated dose: _____mg; route_____.

Premedications may include:

- Acetaminophen (10-15 mg/kg) PO;_____ mg PO.
- Granisetron (10 mcg/kg) IV; _____mcg IV.

SE: ulcerative stomatitis, leukopenia, nausea, abdominal distress, malaise, undue fatigue, chills and fever, dizziness, and decreased resistance to infection.

Hold dose for ANC less than 750 OR liver function tests (LFTs) greater than 5x normal.

- **Myozyme®: Alglucosidase alfa.**

- Dose: 20mg/kg IV.
- Weight: _____kg: calculated dose _____mg IV.
- Dilution Range: 0.5 - 4mg/ml. (Total volume will depend on dilution chosen)
- Dilution preferred_____, total volume _____ml.

Special Precautions:

- **Stable only in Normal Saline.**
- The diluted Myozyme® solution should be filtered through a 0.2 µm, low protein-binding, in-line filter during administration to remove any visible particles.

Infusion rate:

- 1 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 3 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 5 mg/kg/hr x 30 min: _____mg/hr, _____ml/hr.
- 7 mg/kg/hr until complete _____mg/hr, _____ml/hr.

Nurses: Monitor vital signs during (prior to each rate increase) and up to 1 hour following infusion. If abnormal, contact the physician to decrease the rate or temporarily hold the Myozyme® infusion.

SE: anaphylaxis and allergic reactions, risk of acute cardiorespiratory failure, risk of cardiac arrhythmia and sudden cardiac death during general anesthesia for central venous catheter placement, infusion reactions, and immune mediated reactions.

Day (15): Methotrexate

- **Methotrexate: (dose 2 of cycle 1)**

  - Dose: 0.4 mg/kg SC or PO once.
  - Weight _____kg; calculated dose: _____mg; route_____.

Premedications may include:

- Acetaminophen (10-15 mg/kg) PO;_____ mg PO.
- Granisetron (10 mcg/kg) IV; _____mcg IV.

SE: ulcerative stomatitis, leukopenia, nausea, abdominal distress, malaise, undue fatigue, chills and fever, dizziness, and decreased resistance to infection.

Hold dose for ANC less than 750 OR liver function tests (LFTs) greater than 5x normal.

Day (16): Methotrexate

- **Methotrexate: (dose 3 of cycle 1)**

  - Dose: 0.4 mg/kg SC or PO once.
  - Weight _____kg; calculated dose: _____mg; route_____.

Premedications may include:

- Acetaminophen (10-15 mg/kg) PO;_____ mg PO.
- Granisetron (10 mcg/kg) IV; _____mcg IV.

SE: ulcerative stomatitis, leukopenia, nausea, abdominal distress, malaise, undue fatigue, chills and fever, dizziness, and decreased resistance to infection.

Hold dose for ANC less than 750 OR liver function tests (LFTs) greater than 5x normal.

Day (20):

Rituximab IV

- Dose: 375 mg/m²/dose IV; if BSA is lesser than 0.5 m², give 12.5 mg/kg IV.
- Weight _____kg, height _____cm, BSA_____
- Calculated dose _____mg.
- Dilution Range: 1 - 4 mg/mL. (Total volume will depend on dilution chosen)
- Dilution preferred_____, total volume _____ml.

- Infusion rate: 1 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
  2 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
  3 mg/kg/hr until complete: _____mg/hr, _____ml/hr.

- **Premedications may include:**
  - Acetaminophen (10-15 mg/kg) PO; _____ mg PO.
  - Diphenhydramine (1mg/kg) IV; _____mg IV.
  - Methylprednisolone (1mg/kg) IV; _____ mg IV.
  - Granisetron (10 mcg/kg) IV; _____mcg IV

SE: infusion related reactions (i.e. hives, itching, swelling of lips, tongue, throat or face, sudden cough, difficulty breathing, weakness, dizziness, palpitations and chest pain), chills, infections, body aches, tiredness, and low white blood cells**.**

Nursing:

- Monitor vital signs Q _____ min.
- Call MD if any side effect develops.

Day (28)

Repeat investigations: (note: this lab results are important to monitor SE of your medications)

- Set 1: Anti-rhGAA Antibody Evaluation
- Set 2: Lymphocyte Subpopulation Counts (CD3, CD4, CD8, CD19)
  - Monitor for vaccination (vaccinate only after CD19 recovery)
- Set 3: Immune Status/Immunoglobulin Panel (IgG, IgA, IgM, IgE)
  - Monitor for recovery status (when needed) with diphtheria and tetanus toxoid antibody titers
  - Monitor for IVIG administration
- Set 4: Hematology (CBC with differential, Platelets)
  - Monitor platelet counts for less than 50,000/mm^3
  - Monitor neutrophil counts for less than 500/mm^3
  - Monitor for infections resistant to treatment
- Set 5: Chemistry (ALT, AST, CK, CK-MB)
  - Monitor CK and CK-MB for increases greater than 2x baseline result
  - Monitor AST and ALT for increases greater than 3x baseline result
- Set 6: Urine Oligosaccharides (Hex4/Gluc4).

Day (28): Methotrexate, Myozyme®, IVIG

- **Methotrexate: (dose 1 of cycle 3)**

To be given 1 hour prior to Myozyme®.
Given in cycles, each cycle is 3 consecutive days.

- Dose: 0.4 mg/kg SC or PO once.
- Weight _____kg; calculated dose: _____mg; route_____.

Premedications may include:

- Acetaminophen (10-15 mg/kg) PO;_____ mg PO.
- Granisetron (10 mcg/kg) IV; _____mcg IV.

SE: ulcerative stomatitis, leukopenia, nausea, abdominal distress, malaise, undue fatigue, chills and fever, dizziness, and decreased resistance to infection.

Hold dose for ANC less than 750 OR liver function tests (LFTs) greater than 5x normal.

- **Myozyme®: Alglucosidase alfa.**

- Dose: 20mg/kg IV.
- Weight: _____kg: calculated dose _____mg IV.
- Dilution Range: 0.5 - 4mg/ml. (Total volume will depend on dilution chosen)
- Dilution preferred_____, total volume _____ml.

Special Precautions:

- **Stable only in Normal Saline.**
- The diluted Myozyme® solution should be filtered through a 0.2 µm, low protein-binding, in-line filter during administration to remove any visible particles.

Infusion rate:

- 1 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 3 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 5 mg/kg/hr x 30 min: _____mg/hr, _____ml/hr.
- 7 mg/kg/hr until complete _____mg/hr, _____ml/hr.

Nurses: Monitor vital signs during (prior to each rate increase) and up to 1 hour following infusion. If abnormal, contact the physician to decrease the rate or temporarily hold the Myozyme® infusion.

SE: anaphylaxis and allergic reactions, risk of acute cardiorespiratory failure, risk of cardiac arrhythmia and sudden cardiac death during general anesthesia for central venous catheter placement, infusion reactions, and immune mediated reactions.

- **IVIG:**

- Dose: 400 - 500 mg/kg.
- Weight: _____ kg, calculated dose: _____mg.
- Please follow the nursing instructions and the infusion rate as per the "IVIG protocol for Pediatrics" found in the Hospital IV manual.

Day (29): Methotrexate

- **Methotrexate: (dose 2 of cycle 3)**

- Dose: 0.4 mg/kg SC or PO once.
- Weight _____kg; calculated dose: _____mg; route_____.

Premedications may include:

- Acetaminophen (10-15 mg/kg) PO;_____ mg PO.
- Granisetron (10 mcg/kg) IV; _____mcg IV.

SE: ulcerative stomatitis, leukopenia, nausea, abdominal distress, malaise, undue fatigue, chills and fever, dizziness, and decreased resistance to infection.

Hold dose for ANC less than 750 OR liver function tests (LFTs) greater than 5x normal.

Day (30): Methotrexate

- **Methotrexate: (dose 3 of cycle 3)**

  - Dose: 0.4 mg/kg SC or PO once.
  - Weight _____kg; calculated dose: _____mg; route_____.

Premedications may include:

- Acetaminophen (10-15 mg/kg) PO;_____ mg PO.
- Granisetron (10 mcg/kg) IV; _____mcg IV.

SE: ulcerative stomatitis, leukopenia, nausea, abdominal distress, malaise, undue fatigue, chills and fever, dizziness, and decreased resistance to infection.

Hold dose for ANC less than 750 OR liver function tests (LFTs) greater than 5x normal.

Day (42):

- Repeat investigations: (note: this lab results are important to monitor SE of your medications)

  - Set 4: Hematology (CBC with differential, Platelets)
    - Monitor platelet counts for less than 50,000/mm^3
    - Monitor neutrophil counts for less than 500/mm^3
    - Monitor for infections resistant to treatment

  - Set 5: Chemistry (ALT, AST, CK, CK-MB)
    - Monitor CK and CK-MB for increases greater than 2x baseline result
    - Monitor AST and ALT for increases greater than 3x baseline result

- **Myozyme®: Alglucosidase alfa.**

  - Dose: 20mg/kg IV.
  - Weight: _____kg: calculated dose _____mg IV.
  - Dilution Range: 0.5 - 4mg/ml. (Total volume will depend on dilution chosen)
  - Dilution preferred_____, total volume _____ml.

Special Precautions:

- **Stable only in Normal Saline.**
- The diluted Myozyme® solution should be filtered through a 0.2 µm, low protein-binding, in-line filter during administration to remove any visible particles.

Infusion rate:

- 1 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 3 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 5 mg/kg/hr x 30 min: _____mg/hr, _____ml/hr.
- 7 mg/kg/hr until complete _____mg/hr, _____ml/hr.

Nurses: Monitor vital signs during (prior to each rate increase) and up to 1 hour following infusion. If abnormal, contact the physician to decrease the rate or temporarily hold the Myozyme® infusion.

SE: anaphylaxis and allergic reactions, risk of acute cardiorespiratory failure, risk of cardiac arrhythmia and sudden cardiac death during general anesthesia for central venous catheter placement, infusion reactions, and immune mediated reactions.

Day (56)

Repeat investigations: (note: this lab results are important to monitor SE of your medications)

- Set 1: Anti-rhGAA Antibody Evaluation
- Set 2: Lymphocyte Subpopulation Counts (CD3, CD4, CD8, CD19)
    - Monitor for vaccination (vaccinate only after CD19 recovery)
- Set 3: Immune Status/Immunoglobulin Panel (IgG, IgA, IgM, IgE)
    - Monitor for recovery status (when needed) with diphtheria and tetanus toxoid antibody titers
    - Monitor for IVIG administration
- Set 4: Hematology (CBC with differential, Platelets)
    - Monitor platelet counts for less than 50,000/mm^3
    - Monitor neutrophil counts for less than 500/mm^3
    - Monitor for infections resistant to treatment
- Set 5: Chemistry (ALT, AST, CK, CK-MB)
    - Monitor CK and CK-MB for increases greater than 2x baseline result
    - Monitor AST and ALT for increases greater than 3x baseline result
- Set 6: Urine Oligosaccharides (Hex4/Gluc4).

Day (56): Myozyme®, IVIG

- **Myozyme®: Alglucosidase alfa.**

- Dose: 20mg/kg IV.
- Weight: _____kg: calculated dose _____mg IV.
- Dilution Range: 0.5 - 4mg/ml. (Total volume will depend on dilution chosen)
- Dilution preferred_____, total volume _____ml.

Special Precautions:

- **Stable only in Normal Saline.**
- The diluted Myozyme® solution should be filtered through a 0.2 µm, low protein-binding, in-line filter during administration to remove any visible particles.

Infusion rate:

- 1 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 3 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 5 mg/kg/hr x 30 min: _____mg/hr, _____ml/hr.
- 7 mg/kg/hr until complete _____mg/hr, _____ml/hr.

Nurses: Monitor vital signs during (prior to each rate increase) and up to 1 hour following infusion. If abnormal, contact the physician to decrease the rate or temporarily hold the Myozyme® infusion.

SE: anaphylaxis and allergic reactions, risk of acute cardiorespiratory failure, risk of cardiac arrhythmia and sudden cardiac death during general anesthesia for central venous catheter placement, infusion reactions, and immune mediated reactions.

- **IVIG:**
  - Dose: 400 - 500 mg/kg.
  - Weight: _____ kg, calculated dose: _____mg.
  - Please follow the nursing instructions and the infusion rate as per the "IVIG protocol for Pediatrics" found in the Hospital IV manual.

Day (70): Myozyme®, IVIG

- **Myozyme®: Alglucosidase alfa.**

  - Dose: 20mg/kg IV.
  - Weight: _____kg: calculated dose _____mg IV.
  - Dilution Range: 0.5 - 4mg/ml. (Total volume will depend on dilution chosen)
  - Dilution preferred_____, total volume _____ml.

Special Precautions:
- **Stable only in Normal Saline.**
- The diluted Myozyme® solution should be filtered through a 0.2 µm, low protein-binding, in-line filter during administration to remove any visible particles.

Infusion rate:
- 1 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 3 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 5 mg/kg/hr x 30 min: _____mg/hr, _____ml/hr.
- 7 mg/kg/hr until complete _____mg/hr, _____ml/hr.

Nurses: Monitor vital signs during (prior to each rate increase) and up to 1 hour following infusion. If abnormal, contact the physician to decrease the rate or temporarily hold the Myozyme® infusion.

SE: anaphylaxis and allergic reactions, risk of acute cardiorespiratory failure, risk of cardiac arrhythmia and sudden cardiac death during general anesthesia for central venous catheter placement, infusion reactions, and immune mediated reactions.

Day (84):

Repeat investigations: (note: this lab results are important to monitor SE of your medications)

- Set 1: Anti-rhGAA Antibody Evaluation
- Set 2: Lymphocyte Subpopulation Counts (CD3, CD4, CD8, CD19)
  - Monitor for vaccination (vaccinate only after CD19 recovery)
- Set 3: Immune Status/Immunoglobulin Panel (IgG, IgA, IgM, IgE)
  - Monitor for recovery status (when needed) with diphtheria and tetanus toxoid antibody titers
  - Monitor for IVIG administration
- Set 4: Hematology (CBC with differential, Platelets)
  - Monitor platelet counts for less than 50,000/mm^3
  - Monitor neutrophil counts for less than 500/mm^3
  - Monitor for infections resistant to treatment
- Set 5: Chemistry (ALT, AST, CK, CK-MB)
  - Monitor CK and CK-MB for increases greater than 2x baseline result
  - Monitor AST and ALT for increases greater than 3x baseline result
- Set 6: Urine Oligosaccharides (Hex4/Gluc4).

Day (84): Myozyme®, IVIG

- **Myozyme®: Alglucosidase alfa.**

  - Dose: 20mg/kg IV.
  - Weight: _____kg: calculated dose _____mg IV.
  - Dilution Range: 0.5 - 4mg/ml. (Total volume will depend on dilution chosen)
  - Dilution preferred_____, total volume _____ml.

Special Precautions:

- **Stable only in Normal Saline.**
- The diluted Myozyme® solution should be filtered through a 0.2 µm, low protein-binding, in-line filter during administration to remove any visible particles.

Infusion rate:

- 1 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 3 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 5 mg/kg/hr x 30 min: _____mg/hr, _____ml/hr.
- 7 mg/kg/hr until complete _____mg/hr, _____ml/hr.

Nurses: Monitor vital signs during (prior to each rate increase) and up to 1 hour following infusion. If abnormal, contact the physician to decrease the rate or temporarily hold the Myozyme® infusion.

SE: anaphylaxis and allergic reactions, risk of acute cardiorespiratory failure, risk of cardiac arrhythmia and sudden cardiac death during general anesthesia for central venous catheter placement, infusion reactions, and immune mediated reactions.

- **IVIG:**
  - Dose: 400 - 500 mg/kg.
  - Weight: _____ kg, calculated dose: _____mg.

Please follow the nursing instructions and the infusion rate as per the "IVIG protocol for Pediatrics" found in the Hospital IV manual.

Day (98): Myozyme®

- **Myozyme®: Alglucosidase alfa.**

  - Dose: 20mg/kg IV.
  - Weight: _____kg: calculated dose _____mg IV.
  - Dilution Range: 0.5 - 4mg/ml. (Total volume will depend on dilution chosen)
  - Dilution preferred_____, total volume _____ml.

Special Precautions:

- **Stable only in Normal Saline.**
- The diluted Myozyme® solution should be filtered through a 0.2 µm, low protein-binding, in-line filter during administration to remove any visible particles.

Infusion rate:

- 1 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 3 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 5 mg/kg/hr x 30 min: _____mg/hr, _____ml/hr.
- 7 mg/kg/hr until complete _____mg/hr, _____ml/hr.

Nurses: Monitor vital signs during (prior to each rate increase) and up to 1 hour following infusion. If abnormal, contact the physician to decrease the rate or temporarily hold the Myozyme® infusion.

SE: anaphylaxis and allergic reactions, risk of acute cardiorespiratory failure, risk of cardiac arrhythmia and sudden cardiac death during general anesthesia for central venous catheter placement, infusion reactions, and immune mediated reactions.

Day (112):

Repeat investigations: (note: this lab results are important to monitor SE of your medications)

- Set 1: Anti-rhGAA Antibody Evaluation
- Set 2: Lymphocyte Subpopulation Counts (CD3, CD4, CD8, CD19)
  - Monitor for vaccination (vaccinate only after CD19 recovery)
- Set 3: Immune Status/Immunoglobulin Panel (IgG, IgA, IgM, IgE)
  - Monitor for recovery status (when needed) with diphtheria and tetanus toxoid antibody titers
  - Monitor for IVIG administration
- Set 4: Hematology (CBC with differential, Platelets)
  - Monitor platelet counts for less than 50,000/mm^3
  - Monitor neutrophil counts for less than 500/mm^3
  - Monitor for infections resistant to treatment
- Set 5: Chemistry (ALT, AST, CK, CK-MB)
  - Monitor CK and CK-MB for increases greater than 2x baseline result
  - Monitor AST and ALT for increases greater than 3x baseline result
- Set 6: Urine Oligosaccharides (Hex4/Gluc4).

Day (112): Myozyme®, IVIG

- **Myozyme®: Alglucosidase alfa.**

- Dose: 20mg/kg IV.
- Weight: _____kg: calculated dose _____mg IV.
- Dilution Range: 0.5 - 4mg/ml. (Total volume will depend on dilution chosen)
- Dilution preferred_____, total volume _____ml.

Special Precautions:
- **Stable only in Normal Saline.**
- The diluted Myozyme® solution should be filtered through a 0.2 µm, low protein-binding, in-line filter during administration to remove any visible particles.

Infusion rate:
- 1 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 3 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 5 mg/kg/hr x 30 min: _____mg/hr, _____ml/hr.
- 7 mg/kg/hr until complete _____mg/hr, _____ml/hr.

Nurses: Monitor vital signs during (prior to each rate increase) and up to 1 hour following infusion. If abnormal, contact the physician to decrease the rate or temporarily hold the Myozyme® infusion.

SE: anaphylaxis and allergic reactions, risk of acute cardiorespiratory failure, risk of cardiac arrhythmia and sudden cardiac death during general anesthesia for central venous catheter placement, infusion reactions, and immune mediated reactions.

- **IVIG:**
  - Dose: 400 - 500 mg/kg.
  - Weight: _____ kg, calculated dose: _____mg.

Please follow the nursing instructions and the infusion rate as per the "IVIG protocol for Pediatrics" found in the Hospital IV manual.

Day (126): Myozyme®

- **Myozyme®: Alglucosidase alfa.**

  - Dose: 20mg/kg IV.
  - Weight: _____kg: calculated dose _____mg IV.
  - Dilution Range: 0.5 - 4mg/ml. (Total volume will depend on dilution chosen)
  - Dilution preferred_____, total volume _____ml.

Special Precautions:

- **Stable only in Normal Saline.**
- The diluted Myozyme® solution should be filtered through a 0.2 µm, low protein-binding, in-line filter during administration to remove any visible particles.

Infusion rate:

- 1 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 3 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 5 mg/kg/hr x 30 min: _____mg/hr, _____ml/hr.
- 7 mg/kg/hr until complete _____mg/hr, _____ml/hr.

Nurses: Monitor vital signs during (prior to each rate increase) and up to 1 hour following infusion. If abnormal, contact the physician to decrease the rate or temporarily hold the Myozyme® infusion.

SE: anaphylaxis and allergic reactions, risk of acute cardiorespiratory failure, risk of cardiac arrhythmia and sudden cardiac death during general anesthesia for central venous catheter placement, infusion reactions, and immune mediated reactions.

Day (140):

Repeat investigations: (note: this lab results are important to monitor SE of your medications)

- Set 1: Anti-rhGAA Antibody Evaluation
- Set 2: Lymphocyte Subpopulation Counts (CD3, CD4, CD8, CD19)
  - Monitor for vaccination (vaccinate only after CD19 recovery)
- Set 3: Immune Status/Immunoglobulin Panel (IgG, IgA, IgM, IgE)
  - Monitor for recovery status (when needed) with diphtheria and tetanus toxoid antibody titers
  - Monitor for IVIG administration
- Set 4: Hematology (CBC with differential, Platelets)
  - Monitor platelet counts for less than 50,000/mm^3
  - Monitor neutrophil counts for less than 500/mm^3
  - Monitor for infections resistant to treatment
- Set 5: Chemistry (ALT, AST, CK, CK-MB)
  - Monitor CK and CK-MB for increases greater than 2x baseline result
  - Monitor AST and ALT for increases greater than 3x baseline result
- Set 6: Urine Oligosaccharides (Hex4/Gluc4).

Day (140): Myozyme®, IVIG

- **Myozyme®: Alglucosidase alfa.**

  - Dose: 20mg/kg IV.

- Weight: _____kg: calculated dose _____mg IV.
- Dilution Range: 0.5 - 4mg/ml. (Total volume will depend on dilution chosen)
- Dilution preferred_____, total volume _____ml.

Special Precautions:

- **Stable only in Normal Saline.**
- The diluted Myozyme® solution should be filtered through a 0.2 µm, low protein-binding, in-line filter during administration to remove any visible particles.

Infusion rate:

- 1 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 3 mg/kg/hr x 30 min; _____mg/hr, _____ml/hr.
- 5 mg/kg/hr x 30 min: _____mg/hr, _____ml/hr.
- 7 mg/kg/hr until complete _____mg/hr, _____ml/hr.

Nurses: Monitor vital signs during (prior to each rate increase) and up to 1 hour following infusion. If abnormal, contact the physician to decrease the rate or temporarily hold the Myozyme® infusion.

SE: anaphylaxis and allergic reactions, risk of acute cardiorespiratory failure, risk of cardiac arrhythmia and sudden cardiac death during general anesthesia for central venous catheter placement, infusion reactions, and immune mediated reactions.

- **IVIG:**
  - Dose: 400 - 500 mg/kg.
  - Weight: _____ kg, calculated dose: _____mg.

Please follow the nursing instructions and the infusion rate as per the "IVIG protocol for Pediatrics" found in the Hospital IV manual.