Cincinnati Children's Hospital Medical Center

Methotrexate (MTX) Treatment Algorithm
Excerpted from Evidence-based care guideline for Management of Pediatric Moderate/Severe Inflammatory Bowel Disease (IBD), Appendix #4; Publication date: 4/5/07

Indications

1. *induction of remission*
   - as an alternative to Infliximab in children with moderate / severe **CD** AND
     - did not respond or were intolerant 6-MP/AZA to induce remission AND that are steroid-dependent/refractory, defined as:
       - received more than one course of steroids in one year, OR
       - not achieved remission after one month of prednisone alone, OR
       - not tapered off prednisone after three months

insufficient evidence for use in children with **UC**

2. *maintenance therapy* in children with **CD**

Contraindications

- pregnant females
- children with **CD** with already abnormal liver-associated chemistries

See IBD Guideline for more details

Initial Dosing & Adjunct Txs

Induction of remission:
MTX at 15mg/m^2/week up to a maximum total dose of 25 mg subcutaneously (subq)

Continue for 12 - 16 weeks if labs normal

Additionally start supplemental **folic acid** 1 mg/day PO

Prior to **MTX** initiation: females of child bearing age be tested for pregnancy and be proactive in pregnancy prevention strategies

Do Not give live virus vaccines

Safety Monitoring

Repeat ALT and WBC safety monitoring cycle below
at 2, 4, 8, 12 (up to 16) weeks after initial dosing date and after any dosing changes

ALT normal? — Yes → repeat cycle; No → Caution

WBC >3500? — Yes → repeat cycle; No → Consider

Caution: children with **CD** with persistently abnormal liver-associated chemistries should either discontinue **MTX** or consider a liver biopsy

Consider:
- discontinuing **MTX** until leukopenia resolves; when leukopenia resolves, consider restarting **MTX** at 50% of the previous dose, and then slowly advance to the max dose which is not associated with leukopenia
- decreasing **MTX** to 50% of the previous dose, and then slowly advance to the max dose which is not associated with leukopenia.
- potential interaction with other medications may be contributing to leukopenia

Efficacy Monitoring

Adequate response to **MTX** after 12-16 weeks of use?
(defined as decreased physician global assessment to Quiescent or Mild)

Yes →

Continue monitoring every 3 months while on **MTX**
- WBC & ALT to check if WBC maintained at >3500 cells/mm^3
- measurement of serum **BUN and creatinine** to monitor possibility of MTX induced renal toxicity

maintenance therapy for **CD**
After 16 weeks, consider reducing **MTX** to 10mg/m2/week subq and continue Folic Acid 1mg/day PO

Loss of Response overtime
- Yes → Increase **MTX** back to 15mg/m2/week subq
- No → Continue monitoring

No → Consider therapy options not used yet: Infliximab