**Abatacept Use In Paediatric Rheumatology**

Abatacept is a humanised monoclonal antibody that specifically binds to, and blocks the interaction between antigen-presenting cells and T-lymphocytes. It is licensed for the treatment of children with JIA whose arthritis is not adequately controlled by, or who are intolerant of subcutaneous Methotrexate and at least one anti-TNF treatment. It may take several weeks to become effective after commencing treatment or a dose increase. It is not a cytotoxic drug so handling and disposal do not require special precautions beyond the safe disposal of any other injected drug. Patients should also be supplied with an information sheet on Abatacept.

**PRE-TREATMENT INVESTIGATIONS** - Performed in hospital

Full Blood Count, Urea, Electrolytes, Creatinine, & Liver Function Tests

Varicella Zoster and Measles immune status

Quantiferon GOLD assay and a Chest X-ray should be performed to exclude a diagnosis of Tuberculosis before starting any TNF-blocking agent

**PRE-TREATMENT PATIENT INFORMATION**

1. **Pregnancy and Breast-feeding** - Both are Contra-indicated. Whilst not a known teratogen, there is little data to support its safe use in pregnancy and during breast-feeding. Adolescent patients are advised to avoid pregnancy whilst taking Abatacept and for 3 months after stopping it

2. **Infections** - Patients taking any 'biologic' agent are at increased risk of infections. Reactivation of latent Tuberculosis is also a risk but this should be minimised by the above screening

3. **Alcohol** - Although there is no interaction between alcohol and Abatacept many patients are also co-prescribed Methotrexate and should follow the guidance for that drug

4. **Immunisations** - Do not give live vaccines (MMR, BCG, Yellow Fever etc) to children taking Abatacept. Other immunisations, including the HPV vaccine may be less effective, but should be given according to the regular schedule. All children should receive an annual flu vaccine

5. **Drug Interactions** - There are no known drug interactions. However Abatacept should not be used in combination with other 'Biologic' agents

6. **Side-Effects** - Most side-effects are mild and relatively infrequent. Allergic reactions are sometimes seen and can often be prevented by pre-treatment with Hydrocortisone and Chlorphenamine. Patients have reported headaches and coryzal symptoms.

7. **Monitoring** - Patients taking Abatacept will need to have their Blood Count, ESR, U&E’s and Liver Function checked with every infusion. Transient abnormalities are common and often associated with viral infections. A neutrophil count of <1.5x10^9 usually requires the drug to be stopped for 1-2 weeks and the blood tests are then re-checked. If they have returned to normal the Abatacept can be re-started and monitoring continue as normal

8. **Long-Term Side-Effects** - The long-term side-effects of Abatacept are unknown. There have been case-reports of associated malignancies and the Federal Drug Administration in the United States mentions this on its website. Paediatric Rheumatologists are clear however that any possible long-term risk is outweighed, on current evidence, by the clear benefits of controlling active arthritis with Abatacept if Methotrexate therapy fails. Children taking Infliximab are recommended to be enrolled in the UK-wide registry to monitor for this, or any other long-term problems.

**FORMULATIONS**

Intravenous Infusion – Abatacept is only available in this form for children

**DOSAGE & ADMINISTRATION**

Usual dose is 10mg/kg given every 4 weeks.
INFECTIONS & IMMUNOSUPPRESSION

Abatacept in these doses is not a powerful immunosuppressant, but caution is needed as severe infections and even fatalities have been described. Some patients may notice that simple viral illnesses may be more persistent whilst taking Abatacept. Most infections should be dealt with by the patient's GP in the normal manner and it is rarely necessary to stop Abatacept during simple viral illnesses. Patients are advised to omit their Abatacept and seek medical advice if they have been febrile in the previous 48hrs before a dose is due or if they have worsening symptoms.

Varicella contacts and infection

All patients taking Abatacept should have their varicella immune status checked before starting. In those with a negative IgG result consideration is given to immunising the patient before starting Abatacept. However this is not always possible.

Any patient taking Abatacept, regardless of their immune status, who develops Chickenpox or Shingles should be admitted to their local hospital and receive at least 48hrs of IV Aciclovir and complete a total of 5 days treatment

A patient who is known to be immune to varicella does not need treatment if they come into contact with someone who has active infection. However their parents are advised to completely undress their children at least daily and check to see if spots develop.

A patient who is known to be non-immune to varicella needs treatment if they come into contact with someone who has active infection. Contact is defined as any 'kissing' contact, or being in the same room for more than 15 minutes with a case, including the 48hrs before spots appear.

Treatment is either an IM injection of Varicella Immunglobulin (ZIG) if the contact occurred less than 72hrs ago or oral Acyclovir given for 2 weeks from the date of contact. Parents are advised to contact their specialist team directly to discuss the best option for their child.

Measles contacts and infection

All patients taking Abatacept should have their Measles immune status checked before starting. In those with a negative IgG result consideration is given to immunising the patient with MMR before starting Abatacept. However this is not always possible.

A patient who is known to be immune to measles does not need treatment if they come into contact with someone who has active infection.

A patient who is known to be non-immune to measles needs treatment if they come into contact with someone who has active infection. Contact is defined as any 'kissing' contact or being in the same room for more than 15 minutes with a case, including the 48hrs before the rash appears.

Treatment is either an IM injection of Normal Human Immunglobulin (HNIG) if the contact occurred less than 72hrs ago or IV Immunoglobulin if the IM route is not available. Parents are advised to contact their specialist team directly to discuss the best option for their child.