



# Treating Autoimmune Disease with Infliximab

By Michelle Greer, RN

**INFLIXIMAB IS** a chimeric monoclonal antibody biologic drug that works against tumor necrosis factor alpha (TNF- $\alpha$ ). It is a treatment used to alleviate the symptoms of pain and inflammation in a range of autoimmune inflammatory diseases.

Remicade was the first anti-TNF- $\alpha$  treatment approved by the U.S. Food and Drug Administration (FDA), when it was indicated for the treatment of

acute moderate to severe Crohn's disease in 1998.<sup>1</sup> Since then, FDA has approved three biosimilars to Remicade: Inflectra (infliximab-dyyb) in April 2016, Renflexis (infliximab-abda) in April 2017 and Ixifi (infliximab-qbtx) in December 2017. Today, infliximab is approved by FDA to treat many additional indications, including adult ulcerative colitis, pediatric ulcerative colitis, rheumatoid arthritis, psoriatic

arthritis, ankylosing spondylitis and plaque psoriasis (Table 1).<sup>2</sup>

## How Infliximab Works

Studies suggest that TNF- $\alpha$  plays a major role in the inflammation associated with most autoimmune diseases. Infliximab works by seeking out and binding to TNF- $\alpha$ , thus blocking its inflammatory effect and reducing inflammation and pain.<sup>3</sup> For example,

**Table 1. Conditions Treated by Infliximab**

<b>Crohn's Disease</b>	Can reduce signs and symptoms and induce and maintain remission in adult patients with moderately to severely active Crohn's disease who haven't responded well to other therapies
<b>Pediatric Crohn's Disease</b>	Can reduce signs and symptoms and induce and maintain remission in children (ages 6-17) with moderately to severely active Crohn's disease who haven't responded well to other therapies
<b>Ulcerative Colitis</b>	Can reduce signs and symptoms, induce and maintain remission, promote intestinal healing and reduce or stop the need for steroids in adult patients with moderately to severely active ulcerative colitis who haven't responded well to other therapies
<b>Pediatric Ulcerative Colitis</b>	Can reduce signs and symptoms and induce and maintain remission in children (ages 6-17) with moderately to severely active ulcerative colitis who haven't responded well to other therapies
<b>Rheumatoid Arthritis</b>	Can reduce signs and symptoms, help stop further joint damage and improve physical function in patients with moderately to severely active rheumatoid arthritis, in combination with methotrexate
<b>Psoriatic Arthritis</b>	Can reduce signs and symptoms of active arthritis, help stop further joint damage and improve physical function in patients with psoriatic arthritis
<b>Ankylosing Spondylitis</b>	Can reduce signs and symptoms in patients with active ankylosing spondylitis
<b>Plaque Psoriasis</b>	Approved for the treatment of adult patients with chronic severe (extensive and/or disabling) plaque psoriasis under the care of a physician who will determine if it is appropriate considering other available therapies

Source: remicade.com



in Crohn's disease and ulcerative colitis, gastrointestinal symptoms will be controlled, and in rheumatoid arthritis, joint pain will subside and mobility will improve.

Infliximab is injected directly into the vein via intravenous infusion. It is generally administered in a physician's office or hospital outpatient infusion center; however, it can be administered in the home. The infusion is administered by a healthcare professional, usually a nurse, who is trained to safely administer it. Typically, the infusion takes approximately two hours. The dose and frequency of administration are determined by the patient's physician based on diagnosis and weight.

Because infliximab interferes with the immune response, there are effects and adverse reactions that can occur, the most common of which are respiratory infections (that may include sinus infections and sore throat), headache, rash, coughing and stomach pain.<sup>4</sup> Prior to beginning treatment, various tests should be administered and labs should be drawn to minimize or prevent these effects. One of the main concerns is the activation or worsening of a current infection, so several tests are performed to ensure their absence. Tests and assessments include:

- Tuberculosis test
- Cardiac status (since infliximab can worsen congestive heart failure)
- Hepatitis B virus and liver function tests
- Complete blood count (to check for low white cells, low red blood cells [anemia] or low platelets [thrombocytopenia])

In addition, certain medications should not be taken while receiving infliximab, including other monoclonal

**Table 2. Remicade Boxed Warning**

**WARNING: SERIOUS INFECTIONS and MALIGNANCY**

See full prescribing information for complete boxed warning.

- Increased risk of serious infections leading to hospitalization or death, including tuberculosis (TB), bacterial sepsis, invasive fungal infections (such as histoplasmosis) and infections due to other opportunistic pathogens.
- Discontinue REMICADE if a patient develops a serious infection.
- Perform test for latent TB; if positive, start treatment for TB prior to starting REMICADE. Monitor all patients for active TB during treatment, even if initial latent TB test is negative.
- Lymphoma and other malignancies, some fatal, have been reported in children and adolescent patients treated with tumor necrosis factor (TNF) blockers, including REMICADE.
- Postmarketing cases of fatal hepatosplenic T-cell lymphoma (HSTCL) have been reported in patients treated with TNF blockers, including REMICADE. Almost all had received azathioprine or 6-mercaptopurine concomitantly with a TNF-blocker at or prior to diagnosis. The majority of REMICADE cases were reported in patients with Crohn's disease or ulcerative colitis, most of whom were adolescent or young adult males.

*Editor's note: The three biosimilars to Remicade also contain a boxed warning.*

antibodies, other drugs to treat the condition and certain medications that may suppress the immune system. Vaccines should also be up to date, and certain vaccines, specifically live vaccines, should be avoided while receiving infliximab.

Because of the increased risk of serious infection and cancer, there is a boxed warning for infliximab (Table 2).

### Reimbursement

Almost all insurance plans have an infliximab policy outlining how this therapy is covered. Depending on the diagnosis, there may be proof required of other medications tried and failed before infliximab will be approved. Other tests done in preparation for

infliximab therapy to check for potential infections are typically also required for treatment approval. Coverage policies, co-pays and out-of-pocket expenses are different for each patient based on the specific insurance benefit. 📌

**MICHELLE GREER**, RN, is senior vice president of sales for NuFACTOR Specialty Pharmacy.

### References

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