TNF-Alpha Inhibitor Drugs and Complications

TNF-α inhibitors are a class of drug used to treat numerous autoimmune disorders. TNF-α is part of the inflammatory process and leads to cachexia and is a potent pyrogen, and plays a large role in diseases such as ankylosing spondylitis, rheumatoid arthritis, Crohn disease and many others. Complications of treatment with these drugs include increased risk of infection, along with TB reactivation or dissemination.



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Etanercept
E-tan-nurse intercepter
Etanercept is a TNF decoy receptor, which binds to TNF and blunts the immune response.

Decoy TNF- Alpha receptor
Decoy Tuna-fish-afro Receptor
Etanercept works as a fusion protein, which acts as a TNF decoy receptor. This drug mimics the inhibitory effects of naturally occuring TNF receptors, but has a longer half-life and more profound, long-lasting inhibitory effect.

Anti-TNF- Alpha antibody
Anti-Tuna-fish-Afro Ant-tie-body
This drug neutralizes the actions of TNF-α by working as an anti-TNF-α antibody. It binds with high affinity to TNF, blunting the inflammatory response by autoantibodies in various disorders.

Adalimumab
A-Dali-mummy
Adalimumab is a monoclonal antibody and has a high specificity and affinity for TNF-α. It has the capability to lyse cells involved in the inflammatory process, helping to alleviate symptoms.

Infliximab
N-flicks
Infliximab is a monoclonal antibody and has a high specificity and affinity for TNF-α. It has the capability to lyse cells involved in the inflammatory process, helping to alleviate symptoms.

Complications

Increased risk of infection
Up-Arrow Bacteria
By blunting recruitment of other cytokines and lymphocytes, the immune response becomes halted and hindered. Preventing the activation of macrophages and inflammation leads to an increased risk of infection and patients should be considered immunocompromised.

Predispose to Tuberculosis (TB) reactivation
Turning on TB-TV
Latent TB can become reactivated, as TNF-α inhibitors inhibit macrophages. Granulomas are effectively broken down with these medications, which release and disseminate TB which was encapsulated and isolated.

Order Baseline PPD- skin test
Baseline Pea-PD Officer
Prior to prescribing TNF-α inhibiting medications, physicians should order a PPD skin test in their patients to get a baseline level in patients. Patients with heavy inflammation or induration could be suspected to have TB and could end up with disseminated TB after treatment.

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Quantiferon Gold In-Tube

Queen-fern Gold

QFT is an interferon-γ release assay (IGRA) used in tuberculosis diagnosis. The QFT-GIT assay is an ELISA-based, whole-blood test that uses peptides from three TB antigens in an in-tube format. This test has a consistent specificity of >99% in low risk individuals and a sensitivity as high as 92% in individuals with active disease.

Order Chest X-Ray

Chest X-Ray

Patients should also have a chest x-ray to see if there is a history of latent TB infection, which could progress to disseminated TB with treatment of TNF-α inhibitors.

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