Effects of JAK Inhibition on RA Inflammatory Cytokines

Announcer:

On this episode, titled *Effects of JAK Inhibition on RA Cytokine Inflammation* we will hear from Dr. Alan Epstein from the University of Pennsylvania School of Medicine.

Dr. Epstein:

There are four members of the Janus kinase family of protein kinases: JAK1, JAK2, JAK3 and TYK2 or tyrosine kinase 2. The JAK-STAT pathway is utilized by many cytokines to signal the nucleus. Different cytokines use different pairs of Janus kinases and different pairs of STATs for their signaling. Janus kinase inhibitors, referred to as JAK-inhibitors, are small molecules that enter the cell and compete with ATP for the binding site on the Janus kinase molecule. It is important to realize that JAK inhibition is transient and reversible. Therefore, signaling is modulated without being completely inhibited. In inflammatory diseases, such as rheumatoid arthritis, multiple proinflammatory cytokines signal through the JAK-STAT pathway. Disease manifestations related to these cytokines can be modulated by JAK inhibition.

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