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Tocilizumab in the treatment of acute myocardial infarction: A review of what we know with a look to the future

Statement of the Problem: Tocilizumab (TCZ) is an important biologic response modifier that Rheumatologists routinely employ in the treatment of several systemic autoimmune diseases. TCZ binds to interleukin (IL)-6 receptors, inhibits cellular activation, and mitigates inflammation by IL-6. In mid-2017 TCZ was approved by the U.S. Food and Drug Administration for its first non-rheumatologic condition, the treatment of chimeric antigen receptor (CAR) T cell-induced severe or life-threatening cytokine release syndrome in patients 2 years of age or older. With this approval and with the increasing use of TCZ off-label for other nonrheumatologic conditions such as Castleman's Disease and its variant TAFRO syndrome, where else might TCZ be successfully utilized as treatment? Recently interesting data has been published regarding the possible use of TCZ in the treatment of myocardial infarction. This review will focus on the role of IL-6 and it's receptor in myocardial inflammation and association with adverse clinical outcomes. Discussed are results from one animal study and two human trials have been published that studied the effect of TCZ in patients with acute myocardial infarction. Finally, this review summarizes the current data and makes recommendations for future clinical trial development in what hopefully will be a promising application of TCZ for a serious non-rheumatologic condition.

Biography

Matthew B. Carroll is a board-certified Rheumatologist who is clinically active and currently employed by the Singing River Health System. He has had a passion for clinical research and has been an active member of the growing research team at his community hospital. He retired from the United States Air Force in 2017 but during his active duty service developed over 15 protocols and has published over 20 articles. A recent passion has been exploring the possible beneficial role of an IL-6 blockade on acute myocardial infarction. He launched an ambitious protocol studying the short-term effects on major adverse cardiac events which though it was eventually ended after futility analysis suggested no benefit, did enroll over 20 subjects and provided 180-day follow-up of data collection. He continues to actively lobby the study of an IL-6 blockade in other areas of Cardiology.

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