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The Future of Propionibacterial and Mycobacterial Organisms as Potential Cause of Sarcoidosis

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Etiology of sarcoidosis remains elusive despite various research efforts around the globe that strives to advance our understanding of the pathogenesis. Although we have improved our understanding, we have not been able to provide a consensus on the pathogenesis of the disease. As the late Dr. Om Sharma have mentioned, the reasons may be that the sarcoidosis in general is responsive to treatment including corticosteroids compared with other diseases of unknown etiology with limited effective treatments.

Many of the efforts in sarcoidosis have been directed to development of protocols with corticosteroids and other immunosuppressive drugs and biological agents, and perhaps not enough attention have been provided to the discovery of its causative agent(s).

Most experts agree that sarcoidosis results from exposure of an inciting agent in a genetically susceptible host. Possible inciting agents have long been considered to be microorganisms due to the granuloma formation that is the pathologic hallmark of this disease. Naturally, mycobacterial organism has been hypothesized as the potential culprit and mycobacterial DNA have been detected using PCR. Furthermore, high frequency of immunological responses to mycobacterial antigens were observed compared to non-sarcoidosis patients or healthy subjects who were PPD-negative although no difference of the responsiveness were detected between sarcoidosis and PPD-positive healthy subjects. The hypothesis of Propionibacterial as an etiology has been based on successful bacterial culture of the organism, detection of propionibacterial DNA, specific and frequent detection of the bacterial components in granulomas, and increased Th1 immune responses to the bacterium.

Based on the above, various protocols of antibiotic therapy are now under clinical trials in Japan and USA, without much international consensus among researchers and clinicians. It would be prudent to discuss how to work on a consensus and collaborate together to elucidate the etiology of sarcoidosis which will inevitably help bring us closer to a more definitive therapeutic strategy for sarcoidosis.