

53. SALMONELLA AND ANKYLOSING SPONDYLITIS

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Introduction. Ankylosing spondylitis (AS) is one of the autoimmune diseases which remains a deliberating factor in the population. Initially, it was disregarded as a mere result of an altered immune response. Salmonella is a pathogenic factor causing enteric fever and salmonellosis which is gastroenteritis with symptoms of diarrhea with or without blood, cramps, fever, abdominal pain, etc. These are the basic symptoms of food poisoning, which resolves on its own and doesn't need further treatments, unless with some complications.

Aim of study. The association of Salmonella and AS was established on a sporadic basis. Over the years it was estimated that genetic factors and environmental factors play some roles in varying degrees but no specific factors were elucidated that specified the exact role in the pathogenesis of AS that connected the factors in the baseline.

Methods and materials. This information is based on a review of different articles from the open-access databases: PubMed, PMC, and GoogleScholar. The following keywords were used: Salmonella and ankylosing spondylitis.

Results. How Salmonella led to AS was a dilemma till the discovery of HLA-B27 and its antigenic mimicking property. The role of interleukins and the innate immunity response along with the T-cell pathogenesis led more light to the hypothesis. Being a rare combination, it was hard to establish the exact relationship with the infectious-inflammatory regimen. But studies were conducted on both animal models and humans themselves, in the form of controlled trials, cohort, and meta-analysis. Advancement in gastroenterology, rheumatology and better studies of life cycles of infectious organisms finally led to the proposal of the gut-joint axis. It was also proved that Salmonella and related enterobacteria and other microbes caused a significant intestinal dysbiosis, which was regarded as the key pathogenetic factor in the development of AS. Still, it was confusing to relate between the intestinal flora and autoimmune disorder of the joints. Evidence was obtained regarding the intestinal macrophages and their presence at the synovial fluid of the vertebrae, more keen investigations were focused on the MALT cells to establish the profuse link between the phenomenon. Studies were also done focusing on other rheumatologic disorders belonging to the group of spondyloarthropathy like reactive arthritis and similar results were obtained. The ability of Salmonella to alter the intestinal mucosal permeability and the discovery of this fact led to more elaborate investigations over the mucosal barrier and its effects on the gut flora. It was also noted that individuals infected previously with Salmonella are seen to be with rheumatologic disorders more frequently than that of a normal population. Both typhoidal and non-typhoidal Salmonella were associated but there is still no evidence of the degree to which each of them causes AS or the degree to which it remains as the risk factor. Depending on the etiology of the disorder there must be changes in treatment approaches, for better management and a major role in prophylaxis, as AS affects the lifestyle and quality of life of the patient to a humongous extent. In addition to the immuno-suppressive drugs and physiotherapy, approaches must be taken to improve the gut microflora and to maintain a stable equilibrium between them. Careful administration of antibiotics and natural probiotic implementation is of prime importance in disease prophylaxis and treatment.

Conclusion. This study was intended to establish the link between Salmonella and ankylosing spondylitis and also to implement a better understanding of the gut-joint axis. Though we succeeded a long way in figuring out the relationship between them, furthermore studies are required to get a profound link in the evolutionary features of Salmonella-related AS. This work gives a lot of answers as well as further questions regarding a clear-cut insight and relationships between not only infectious and autoimmune disorders but also shows a possibility of links between unrelated diseases or conditions.