disease which is considered the main enhancer of acute and chronic rheumatic heart damage.

CD4+CD25+ regulatory T cells which has a critical role in immune suppression and reversing the autoimmunity were found in very lower numbers, and this may explain to a certain degree why the autoimmune-inflammatory process still active in rheumatic heart disease.

Acknowledgement

The authors would like to thank all the staff in Microbiology and Pathology Departments / College of Medicine / Al-Nahrain University, Ibn Al-Bitar Hospital for Cardiac Surgery, Al-Kadhimya Teaching Hospital, and Laboratory of Health Centre for their assistance in this study.

References

1. Lan R, Ansari A, Lian Z, and Gershwin M. Regulatory T cells: Development, function and role in autoimmunity. *Autoimmunity Reviews*, 2005; 4: 351-363.
2. Crispin J, Vargas M, and Alcocer-Varela J. Immunoregulatory T cells in autoimmunity. *Autoimmunity Rev*, 2004; 3: 45-51.
3. Bach J F. Regulatory T cells under scrutiny. *Nature Rev Immunol*, 2003; 3: 189-198.
4. Sakaguchi S, Sakaguchi N, Shimizu J, Yamazaki S., et al. Immunologic tolerance maintained by CD4+CD25+ regulatory T cells: their common role in controlling autoimmunity, tumor immunity, and transplantation tolerance. *Immunol Rev*, 2001; 182: 18-32.
5. Berthelot JM and Maugars Y. Role for suppressor T cells in the pathogenesis of autoimmune diseases (including rheumatoid arthritis). *Facts and hypotheses. Jt Bone Spine,* 2004; 71(5): 374-380.
6. Fehervari Z and Sakaguchi S. CD4+ Tregs and immune control. *J Clin Invest*, 2004; 114(9): 1209-1217.
7. Hernandez-Pacheco G, Flores-Dominguez C, and Rodriguez-Perez J. Tumor necrosis factor-alpha promoter polymorphisms in Mexican patients with rheumatic heart disease. *J Autoimmun*, 2003; 21: 59-63.
8. Julian D, Cowan J, and McLenachan J. Cardiology. 7th ed. London, WB Saunders Company Ltd., WBC, Bridgend, Mid Glamorgan. 1998.
9. Bronze MS and Dale JB. The re-emergence of serious groups A streptococcal infections and acute rheumatic fever. *American Journal of Medical Science,* 1996; 311(1): 41-54.
10. Guilherme L, Fae K, Oshiro S, Tanaka AC, Pomerantzeff PM, and Kalil J. How S. pyogenes-primed peripheral T cells trigger heart valve lesions. *Ann NY Acad Sci,* 2005; 1051: 132-140.
11. Shevach EM. Regulatory T cells in autoimmunity. *Annu Rev Immunol*, 2000; 18: 423-449.
12. Lerman MA, Larkin J 3rd, Cozzo C, Jordan MS, and Caton AJ. CD4+CD25+ regulatory T-cell repertoire formation in response to varying expression of a neo-self-antigen. *J Immunol*, 2004; 173: 236-244.
13. Hsieh CS, Liang Y, Tyznik AJ, Self SG, Liggitt D, and Rudensky AY. Recognition of the peripheral self by naturally arising CD4+CD25+ T-cell receptors. *Immunity*, 2004; 21: 267-277.
14. Boyum A. Isolation of Mononuclear Cells and Granulocytes from Human Blood. Scand. *J. Clin. Lab. Invest*, 1968; 21 (97): 77-89.
15. Wigzell H, and Anderson B. Isolation of Lymphoid Cells Active Surface Receptors Sites. *Annu. Rev. Microbiol*, 1971; 25: 291-299.
16. Baecher-Allan C, Brown J, Freeman G, and Hafler D. CD4+CD25 high Regulatory cells in human peripheral blood. *The Journal of Immunology*, 2001; 167: 1245-1253.
17. Mottet C, Uhlig H, and Liew F. Cutting edge: Cure of colitis by CD4+CD25+ regulatory T cells. *J Immunol*, 2003; 170: 3939.
18. Sullivan K, McDonald-McGinn D, and Zackai E. CD4+CD25+ T-Cell Production in Healthy Humans and in Patients with Thymic Hypoplasia. Clinical and diagnostic laboratory immunology. *American Society for Microbiology*, 2002; 9(5): 1129-1131.
19. Liu W, Putnam AL, Xu-yu Z, Szot GL, Lee MR, Zhu S, et al. CD127 expression inversely correlates with FoxP3 and suppressive function of human CD4+ Tregs. *J Exp Med*, 2006; 203: 1701-1711.
20. Heine H, and Lien E. Toll-like receptors and their function in innate and adaptive immunity. *Int Arch Allergy Immunol*, 2003; 130: 180-192.
21. Bayer AS, Bolger AF, Taubert KA, Wilson W, Steckelberg J, Karchmer AW, et al. Diagnosis and management of infective endocarditis and its complications. *Circulation*, 1998; 98: 2936-2948.
22. Warrington RJ, Lee KR, and McPhillips S. The value of skin testing for penicillin allergy in patient population: Analysis of the subsequent