

#1977 - Impact of gut microbiota on the pathogenesis or treatment of lupus nephritis

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Around 60% of lupus patients suffering lupus nephritis (LN) complications that cause high mortality rate than lupus patients without nephritis. A variety of mechanisms is involved in LN pathogenesis. To date, the cause of SLE and LN is incompletely understood, but a combination of genetic and environmental factors are thought to be involved [1]. It is not surprising that in recent years, there have been attempts to consider the intestinal microbial profiles, microbiota, and its role in the pathogenesis of lupus[2]. Decoding the relationship between gut microbiota and LN is not possible till now; however, it is undeniably key for the discovery of therapeutics for this debilitating and fatal disease. Recent research reported lower *Firmicutes/Bacteroidetes* ratio among LN patients [3]. It is reported that increased *lactobacillus* spp. in gut microbiota could ameliorate kidney disorders in lupus-prone mice. There are two mechanisms underlying the relationship between microbiota composition and LN: (1) The onset of renal dysfunction occurs subsequent to increased intestinal permeability in which *lactobacillus* spp. enhances the gut barrier dysfunction, increasing IL-10, decreasing IL-6 and pathogenic IgG2 levels hence reduced renal disease. (2) Rebalancing T-cell subsets in the kidney (increased Treg *versus* decreased Th-17 cells) is another possible mechanism in reducing renal dysfunction in lupus, which they can be achieved by applying *lactobacillus* spp [3]. Furthermore, bacterial products stimulate intra-renal immune cells and renal cells, which can trigger a transient

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aggravation of proteinuria and kidney damage [4].

References

- [1] Koutsokeras, T. and T. Healy, *Systemic lupus erythematosus and lupus nephritis*. Nature Reviews Drug Discovery, 2014. **13**(3): p. 173-174.
- [2] Neuman, H. and O. Koren, *The gut microbiota: a possible factor influencing systemic lupus erythematosus*. Curr Opin Rheumatol, 2017. **29**(4): p. 374-377.
- [3] Mu, Q., et al., *Control of lupus nephritis by changes of gut microbiota*. Microbiome, 2017. **5**(1): p. 73.
- [4] Kim, Y. and S.C. Shim, *Wolves Trapped in the NETs The Pathogenesis of Lupus Nephritis*. Journal of Rheumatic Diseases, 2018. **25**(2): p. 81-99.

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