

Relation of Regulatory Foxp3⁺ T Cells with *Helicobacter pylori* and Its Virulence Genes

Al-Baghdadi M¹, Omnia El-Badawy¹, Douaa M. Sayed², Maggie A. Ibrahim¹, Abdel Mohsen E³, Salwa S. Seif El-din^{1,4}, Amany G. Thabit¹

Departments of ¹Medical Microbiology & Immunology Faculty of Medicine, Assiut University, Assiut, Egypt, ²Clinical Pathology, South Egypt Cancer Institute, Assiut University, Assiut, Egypt, ³Internal Medicine, Gastroenterology Unit, Faculty of Medicine, Assiut University, Assiut, Egypt, and ⁴Basic Sciences, College of Medicine, Princess Nourah Bint Abdulrahman University, Riyadh, KSA.

The study aimed to assess the tangled relation between various CD25 subsets (positive, negative and high) of CD4⁺ FoxP3⁺ T cells and *H. pylori* including its virulence genes (*CagA* and *VacA*). Diagnosis of *H. pylori* and its virulence genes was based on a positive culture, histopathology and/or CLO-test and PCR. Flow cytometry was used to quantify Tregs. CD4⁺CD25^{high} Foxp3⁺ T cells were higher in patients than controls and somewhat more in *H. pylori* positive than negative patients. CD4⁺CD25^{high} Foxp3⁺ T cells secreting IL10 were lower in *H. pylori* positive patients. CD4⁺CD25⁺Foxp3⁺T cells were also higher in patients than controls and more in those negative for *H. pylori*. Moderate negative correlation was found between the presence of *CagA* or *VacA* sm genotypes and Tregs secreting IL10. CD4⁺CD25⁻ Foxp3⁺ T cells, especially those secreting IL10, tend to be higher in patients carrying *VacA* m1 allele than m2 allele. In conclusion, *H. pylori* stimulate a regulatory T cell response, probably contributing to gastric diseases. CD25 negative subset of Foxp3⁺CD4⁺T cells needs further studying to declare its potential role in immunopathogenesis of gastric diseases. Tregs are positively associated with *vacA* alleles