

Publication

"The NET Outcome": Are Neutrophil Extracellular Traps of Any Relevance to the Pathophysiology of Autoimmune Disorders in Childhood?

JournalItem (Reviews, Editorials, Rezensionen, Urteilsanmerkungen etc. in einer wissenschaftlichen Zeitschrift)

ID 4380650

Author(s) Giaglis, S.; Hahn, S.; Hasler, P.

Author(s) at UniBasel [Hahn, Sinuhe](#) ;

Year 2016

Title "The NET Outcome": Are Neutrophil Extracellular Traps of Any Relevance to the Pathophysiology of Autoimmune Disorders in Childhood?

Journal Front Pediatr

Volume 4

Pages 97

Keywords NETosis; NETs; Sle; biomarkers; juvenile idiopathic arthritis; neutrophils

Neutrophil extracellular trap (NET) formation represents a form of cell death distinct from apoptosis or necrosis, by which invading pathogens are simultaneously entangled and potentially eliminated. Increased NET formation is observed in systemic lupus erythematosus (SLE), rheumatoid arthritis, antineutrophil cytoplasmic antibody-associated small vessel vasculitis, antiphospholipid antibody syndrome (APS), and psoriasis. NETs contribute to the pathogenesis of autoimmunity by exposing cryptic autoepitopes, which may facilitate the generation of autoantibodies, induce the production of interferons, and activate the complement cascade. In SLE, augmented disease activity and renal disease are associated with increased NET formation, so that NETs could serve as a marker for the monitoring of disease activity. NETs can additionally cause endothelial cell damage and death and stimulate inflammation in atheromatous plaques, adding to the accelerated atherosclerosis witnessed in autoimmune disease. Since NETs induce production of interferons, assessing the extent of NET formation might facilitate the prediction of IFN- α levels and identification of SLE patients with presumably better responses to anti-IFN- α therapies or other novel therapeutic concepts, such as N-acetyl-cysteine and inhibitors of DNase 1 and peptidylarginine deiminase 4 (PAD4), which also target NETs. In summary, the study of NETs provides a novel approach to the understanding of autoimmune disease pathogenesis in childhood and opens new vistas in the development of sensitive disease markers and targeted therapies.

Publisher FRONTIERS MEDIA SA

ISSN/ISBN 2296-2360 (Print) 2296-2360 (Linking)

URL <https://www.ncbi.nlm.nih.gov/pubmed/27679792>

edoc-URL <https://edoc.unibas.ch/61786/>

Full Text on edoc No;

Digital Object Identifier DOI 10.3389/fped.2016.00097

PubMed ID <http://www.ncbi.nlm.nih.gov/pubmed/27679792>

ISI-Number WOS:000383013300001

Document type (ISI) Article