

# A PROLIFERATION-INDUCING LIGAND (APRIL) AS A DIAGNOSTIC BIOMARKER OF BACTERIAL INFECTION

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Differential diagnosis of inflammatory disorders remains still a struggling issue in everyday practice. For now all parameters that are commonly used are not specific enough to be able to differentially diagnose various inflammatory disorders. The discovery of a new parameter that could distinguish a bacterial infection from a variety of inflammatory disorders would have a significant impact on therapy courses in terms of introducing antibiotics. APRIL is a membrane binding protein that represents one of the main survival factors for immature, naive and activated B-cells.

The objective of this study was to determine whether serum levels of a proliferation-inducing ligand (APRIL) are higher in patients with bacterial infections than in other inflammatory disorders.

102 patients and 30 healthy volunteers were included in this study and all serum samples were assayed for APRIL by enzyme linked immunosorbent assay. The 102 patients were split in three groups: group 1 included 35 patients with uncomplicated sepsis that has been microbiologically and radiologically proven; group 2 included 38 patients with B-cell malignancies; and group 3 included 29 patients with autoimmune inflammatory diseases. The differences between groups were examined by non-parametric Kruskal-Wallis and Mann-Whitney test, after we found that distribution of APRIL values deviates from normal distribution.

Mean values and SD are shown in Table 1. Kruskal-Wallis test showed that there is statistically significant difference between groups. Post hoc Mann-Whitney test showed that APRIL levels in the serum samples from patients with proven bacterial infection were significantly higher than APRIL levels in healthy controls and both other groups ( $p=0.000$ ,  $p=0.000$ ,  $p=0.000$ , respectively).

These results show that the activation of B-cells is stronger in bacterial infection than in other evaluated inflammatory disorders. Therefore, APRIL can be used to discern bacterial infections from other inflammatory disorders and can be helpful in making decision whether or not we should start antibiotic treatment.

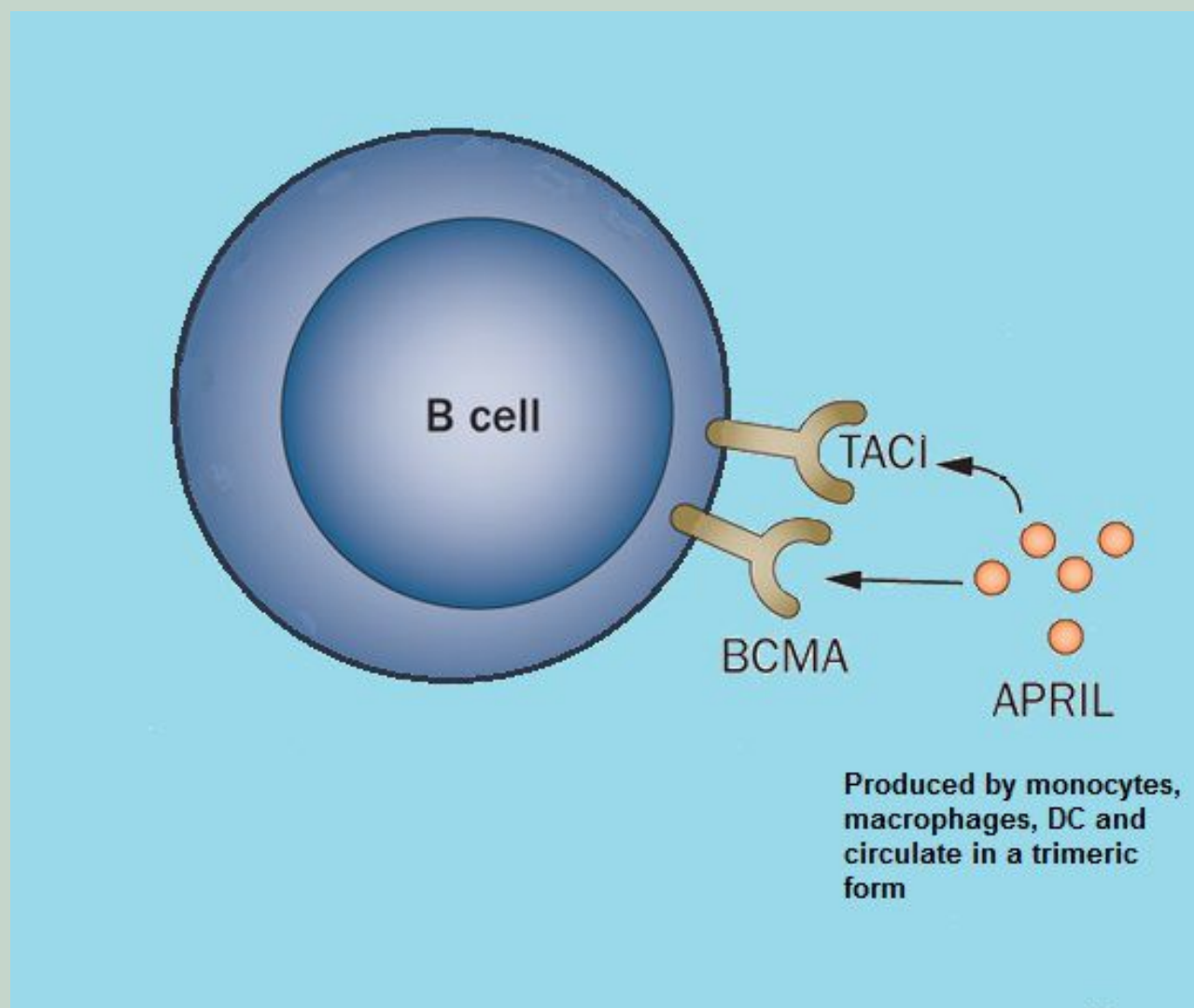


Table 1. APRIL concentrations in serum samples

	N	Mean	Std.deviation	Std.error
healthy control	30	2.1667	0.54667	0.09981
uncomplicated sepsis	35	7.6143	6.17703	1.04411
B-cells malignancies	38	1.7105	0.43312	0.07026
Autoimmune inflammatory diseases	29	2.4224	2.31658	0.43018