A24 ANTIBODIES TO THE ENDOPLASMIC RETICULUM-RESIDENT CHAPERONES CALNEXIN, BIP AND GRP94 IN PATIENTS WITH RHEUMATOID ARTHRITIS AND SYSTEMIC LUPUS ERYTHEMATOSUS

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Introduction To investigate the presence of autoantibodies against mammalian heat shock proteins (Hsps) of the endoplasmic reticulum (ER) in patients with rheumatoid arthritis (RA), systemic lupus erythematosus (SLE), systemic sclerosis (Ssc) and inflammatory bowel disease (IBD).

Methods Sera from 40 healthy donors, 63 SLE patients, 22 Ssc patients, 14 patients with IBD and 100 RA patients were collected. Detection of serum IgG antibodies against the ER resident Hsps BiP, Grp94 and calnexin was carried out with ELISA. The specificity of sera positive for individual Hsps was confirmed by immunoblotting. Statistical analysis was performed using Welch t test, Mann-Whitney U test, partial correlation and Pearson's correlation.

Results In patients with RA and SLE elevated autoantibody titers against mammalian BiP, Grp94 and calnexin were discovered. Healthy donors also exhibited autoantibodies against these Hsps, however, titers and frequencies were lower than in RA as well in SLE patients. Autoantibodies against BiP and calnexin were significantly increased at two and three clinical visits of RA patients compared with healthy donors. In addition, the presence of anti-calnexin antibodies correlated significantly with the occurrence of BiP and Grp94 autoantibodies in patients with RA. Furthermore, these autoantibody titers were significantly elevated in female RA patients.

Conclusion The authors identified calnexin an integral chaperone of the ER membrane, as novel autoantigen in RA and SLE. Since BiP, Grp94 and calnexin are ER-resident proteins and are therefore restricted to eukaryotic cells, our data provide evidence for an autoantibody generation process against self-Hsps without an initial trigger by bacterial infections.