

DIAGNOSTIC IGG-TEST TOOLS FOR HYPERSENSITIVITY PNEUMONITIS CAUSED BY MICROBIAL ANTIGENS FROM METAL WORKING FLUIDS

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Occupational exposure to microbially contaminated metal working fluids (MWF) can cause hypersensitivity pneumonitis (HP). One step in the HP-diagnosis is to identify the culprit by detection of corresponding specific IgG-antibodies (sIgG) in the patient's serum. As commercial sIgG-tests are currently not available, protein antigens were prepared from MWF-workplace samples and from bacterial isolates of various *Pseudomonas* species and *Mycobacterium immunogenum* based on a suspected case of HP induced by microbially contaminated MWF. Subsequently, sIgG-concentrations to MWF-antigens were measured in 34 patients with suspected MWF-HP and 20 non-MWF exposed healthy controls. In 50% of suspected HP-cases increased sIgG-concentration to at least one MWF-relevant antigen was measured, most prominent was *M. immunogenum* (88%), followed by *Pseudomonas oleovorans* and *Pseudomonas. spec* (82% each), MWF-antigen mix (71%) and *Pseudomonas alcaliphila* (65%). Additional sIgG-measurement to mould antigens revealed increased sIgG-concentration to *Aureobasidium pullulans* (77%) and *Micropolyspora faeni* (71%). Spearman correlation of all microbial sIgG-values showed strong correlation among *Pseudomonas*, *Mycobacterium* and MWF antigens, whereas the correlation to mould antigens was low. Specific IgG-concentration to mould antigens strongly correlated among themselves, but not to MWF-antigens. This shows that MWF-antigens can be a useful diagnostic tool in patients with suspected MWF-HP and are available for further research.