Spontaneous Adherence of *Salmonella typhosa* to Human Peripheral Blood Lymphocytes in Typhoid Fever

Several reports have demonstrated that different bacterial strains can adhere *in vitro* to human peripheral blood lymphocytes (PBL) (1, 2). In particular, DeBoer et al. (3) have shown that *Salmonella schottmülleri* binding provides a useful tool in the isolation of human lymphocyte subpopulations. Moreover, we reported recently that *Salmonella typhimurium* LT-2 and *Salmonella minnesota* R345 (Rb) and R595 (Re) possess the capacity to adhere *in vitro* to human PBL (4). Binding is mediated by the lipopolysaccharide moiety of the outer membrane and is restricted to T lymphocytes which bear a trypsin-sensitive binding site(s) (4). In contrast, bacterial cytoadherence does not involve other lymphocyte populations since the *Salmonella*-unbound fraction is enriched with B and natural killer cells (5).

In the light of the above data, we carried out extensive studies on typhoid fever with regard to the *in vitro* binding to human PBL of *Salmonella typhosa* isolated from patients. The assay was performed at different time intervals during the course of the disease. At the onset of the disease, the degree of cytoadherence was higher in patients than in healthy donors (36.5 ± 8.6 versus 6.2 ± 2.7). Thereafter, the frequency of binding progressively decreased, dropping to normal levels in the later phase of the disease (third week of chemotherapy). Interestingly, we observed in the same patients at the beginning of the disease that purified PBL carried bacteria on their surface (frequency: 9.5 ± 3.6), thus suggesting the occurrence of *in vivo* binding. Moreover, when PBL suspensions were cultured in different bacteriological media to identify bacterial species, *S. typhosa* was isolated in all instances. The

frequency of *in vivo* adherence overlapped the pattern observed in the *in vitro* experimental approach. In fact, binding dramatically diminished throughout chemotherapy and disappeared in the later phase of the disease. These data suggest that bacterial binding may represent a novel approach to investigating the mechanisms involved in the immune response during *Salmonella* infection.

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Laudatio

Walter Marget – 65 Jahre

Es ist kein Zufall, daß einer der bedeutendsten deutschen Infektiologen von Hause aus Kinderarzt ist. Hier, in der Pädiatrie, wurden die „Kinderkrankheiten“, wurden Infektionen von jeher ernst genommen, wurde ihre Epidemiologie sorgfältig erfaßt und ihre Übertragungsketten aufgedeckt, Maßnahmen, die erst in den 50er und 60er Jahren auch für andere Infektionen galten, nachdem die Krankenhausinfektionen erkannt und wissenschaftlich angegangen wurden.

Walter Marget brachte für seine Tätigkeit in der Kinderklinik Freiburg das Rüstzeug mit, das er am Hygiene-Institut unter Rosenwaldt, Habs und Bader erworben hatte; und das Interesse an der Aufklärung von Epidemien, wie sie immer wieder in kleinen Räumen aufzutreten pflegten. So konnte er schon 1951 eine Dyspepsie-Coli-Epidemie aufklären und später eine vielbeachtete Untersu-

chung über die „Krankenhaus-Staphylokokken“ abschließen.

Die Hospital-Hygiene hat seitdem Walter Marget nicht mehr losgelassen, weder in seiner Tübinger, noch später in seiner Münchener Zeit, wobei in zunehmendem Maße chemotherapeutische Fragen in den Mittelpunkt seiner wissenschaftlichen