529

THE BIOPHYSICS OPTION: A PILOT STUDY ON FUNCTIONAL RECOVERY OF IMMUNODEFICIENCY

G.Marineo. F.Marotta

The qualitative and quantitative decay of immune system due to either physiologic aging process or to "early aging" related to longstanding stress condition induced by chronic infections such as HIV or HCV, brings about a number of characteristic abnormalities of lympocytes asset. In this study, some of these abnormalities (CD19, CD3, CD4, CD3+DR+, NK) were our reference points is an antiaging treatment by a novel non-invasive biophysical approach. The aim of such patented methodology is to lower the entropy level of the body by a closely-monitored delivery of electromagnetic-generated "energy clusters". These are given in such a way to be recognized as "self" by the body, thus being available and promoting energy-driven reparative/regenerative processes together with an overall expansion of functional stores. Our study population consisted of 8 severely immunodeficients patients (4 over 70- year old, 3 HCV +ve-related cirrhotics, 1 HIV +ve) who showed a markedly impaired lymphocytes array. All patients have undergone scheduled treatment cycles, with an overall 75 sessions, with the Entropy-Variation System "Delta-S". Immunologic parameters were checked at the entry , after 30% of the treatment period and at the end. In all cases it was observed a statistically significant ($p < 0.001$) return to normal level of depressed immunologic phenotypes (B and CD4), of the enhanced subsets (CD8), a normalization of CD4/CD8 ratio and an increase (>7%) of CD3+DR+. NK subset, which was depressed only in the HIV case, reverted to normal. No adverse effects have been observed throughout the whole treatment period, while an overall subjective improvement was a common finding. The present preliminary data suggest that "Delta-S" system biophysical treatment might open a new fascinating avenue in tackling the issue of improving would-be irreversible biological events.

Delta R & D, VIA DI Mezzocammino, 82 20123 Roma, Italy

530

IMMUNOGLOBULINS (IG) ALTER SURVIVAL, PHENOTYPE, AND FUNCTION OF MACROPHAGES (M) IN NEONATES AND ADULTS

Orlikowsky T, Spring B, Dannecker G, Hoffmann M, Poets C

Background: IG often were used in neonatal sepsis as an adjuvant treatment strategy. Recent trials showed lacking IG-effects on mortality. Currently IG is not recommended for the prophylactic or therapeutic use in neonatal sepsis. Little is known on the interaction of IG and neonatal M. In adults, IG protect M from IL-10-induced apoptosis. Aim: To test the hypothesis, wether IG would alter M-survival, -phenotype and M-dependent T cell reactions in neonates more profoundly than in adults. Methods: Cells were counted, phenotyped by flow cytometry, incubated with different concentrations of polyvalent IgG and stimulated with anti-CD3 mAb, anti-CD4 mAb, IL-10 or IFN-gamma. Results: After 24 hours IG (10ng/ml) induced M-apoptosis in cord blood and in higher concentrations (100ng/ml) in PBM. IG-crosslinking did not prevent M-apoptosis in either group. The apoptotic cell death of M was associated with decreased size, increased granularity and downmodulation of CD14, HLA-DR, CD80 and CD86. The IFN-gamma-induced CD80-/CD86-upregulation was impaired by IG. cord blood macrophages (CBM) responded more to this inhibition ($p < 0,05$). Although anti-CD3-binding kinetics were unaffected, IG-treatment (anti-CD3 5µg/ml 4 hours prior to IG 1ng/ml) lead to an inhibition of T cell blast formation and decreased CD28-upregulation on T cells, with almost a paralysis in cord blood ($p<0,05$ vs. adult blood). Conclusions: IG induce M-apoptosis in concentrations, which may be achieved by therapeutical use in vivo. IG inhibit costimulatory and cytotoxic M-functions. CBM are exquisitely susceptible to these effects. In vivo, low concentrations of IG in preterm neonates may balance or regulate M-survival.

Thorsten Orlikowsky, MD
University Children's Hospital
Dept. of Neonatology
Calwerstraße 7
D-72076 Tübingen
email: thorsten.orlikowsky@med.uni-tuebingen.de

531

AM3 (INMUNOFERÓN®) DECREASES CD62L EXPRESSION IN HUMAN PERIPHERAL BLOOD PHAGOCYTIC CELLS

Reyes E, Alonso-Lebrero JL, Brieva A, Mallo AB, Pivel JP, Álvarez-Mon

Purpose: The inflammatory processes are critical in several pathologies in which the immune system is involved. Surface membrane molecules that regulate the leukocyte traffic as L-selectin (CD62L) play a relevant role in the development and maintenance of inflammation. The purpose of this investigation was to determine if AM3 affects the expression of molecules involved in inflammatory processes. Methods: Peripheral blood leucocytes (PBL) were obtained from 14 healthy controls, incubated in serum free medium with L-glutamine (PANSERIN 401) with AM3 (Inmunoferon®, I.F.Cantabria, S.A. Madrid, Spain) or phorbol 12-myristate 13-acetate (PMA) during 20 min. PBL were incubated with phycoerythrin-(PE) labeled cell surface antigens CD11a, CD11b, CD11c, CD14, CD15, CD18, CD29, CD31 and CD62L. After cell surface staining, PBLs were treated for 20 min with FACS Lysing Solution. Acquisition and analysis were carried out with a FACSCalibur flow cytometer using Cell Quest software. We also determinated sCD62L levels by ELISA. Exact data: Respect to control conditions, in neutrophils from PBL, AM3 significantly decreases the expression of CD62L and CD31 molecules (13.25 ± 4.05 and 78.03 ± 5.48 respectively) and increases the expression of CD11b, CD15 and CD18 molecules (131.02 ± 9.49, 109.23 ± 3.81 and 113.04 ± 2.95 respectively). In monocytes, AM3 significantly decreases the expression of CD62L, CD14, CD18, CD29 and CD31 molecules (48.83 ± 7.72, 70.83 ± 4.81, 82.30 ± 6.03, 81.80 ± 5.40 and 79.93 ± 3.73 respectively). We also found a significantly increase of sCD62L after AM3 incubation (581 ± 18 vs 520 ± 12 ng/ml). Summary of results: Our results indicate that AM3 can cause shedding of L-selectin from the surface of neutrophils and monocytes, and this may prevent neutrophils and monocytes from attaching to the endothelial cell surfaces.

Laboratory of Immune System Diseases and Oncology, R&D Nacional Center for Biotechnology-CSIC Associated Unit. Department of Medicine, University of Alcala. 28871 - Madrid, Spain. R&D Department, Industrial Farmacéutica Cantabria SA, Madrid, Spain.

532

THE EFFECT OF STIMULATOR OF INTERFERON SYSTEM CYCLOFERON ON MUCOSAL IMMUNITY OF THE FEMALE GENITAL TRACT

Galkina O., Nesterov I., Kovalenko A., Ailamasian E., Totolian A.

The aim of the research was to study clinical and immunological efficacy of a synthetic interferon inductive preparation – Cycloferon ("Polysan", St.-Petersburg, Russia) on mucosal immunity of the female genital tract during local treatment of bacterial vaginitis and candidosis. The study was done in placebo control design. We examined 41 female patients of reproductive age (27 patients were treated with Cycloferon, 14 – received placebo course). Patients received local therapy of Cycloferon liniment during 7-10 days. Microbiological efficacy was assessed by evaluating the microbiological indices; immunological efficacy was evaluated as immunological parameters of blood (lymphocyte phenotype (by flow cytometry) and serum immunoglobulin concentration (ELISA)) and of vaginal fluid (permeability of vaginal histohaematic barrier (albumin in vaginal fluid/ albumin in serum ratio) and immunoglobulin production – ELISA tests).
Clinical efficacy was seen in 80,0% patients treated with Cycloferon. The rate of pathologic vaginal microbiological indexes was 2,6 times lower than in the placebo group. During the course of treatment the level of IL-8 in serum was within normal level (2-10 ng/ml). We observed changes in immunological parameters of serum in treated patients: the initially increased number of CD8+ and CD25+ lymphocytes decreased and achieved the normal level; the CD4/CD8 ratio became normal (1,5-2); the phagocytic number of PMN increased. The preparation has positively changed permeability of vaginal histohaematic barrier, increases local IgG and IgA concentrations (from 92.8 ± 14.5 to 252.9 ± 18.5 mg/l, $p<0.005$; and from 55.6 ± 5.8 to 199.5 ± 13.5 mg/l, $p<0.005$ respectively) presumably because of its effects both on diapedesis of IgG through the vessel walls and increased local IgA synthesis. Normalization of immunological parameters correlated with clinical data. According our data the indications for local treatment of Cycloferon in patients with bacterial vaginitis and candidosis are follows: the local synthesis of IgE and significantly rised permeability of vaginal histohaematic barrier.