ACLAECINOM YC A/ETOPOSIDE COMBINATION THERAPY FOR ADVANCED RE-
LAPSED ACUTE MYELOID LEUKEMIA - RESULTS OF A PILOT STUDY OF THE
ARZTSGEMEBNSCHAFT INNSBRUCKER ICHTOMARKTSGEMEBNSCHAFT
W. Hiddemann, K. Becker, A. Große-Metke, E. Cuse, A. Bartholo-
mächer, A. Reiche, I. Mechten, D. Westfeld, M. Fuchs and Th. Bührcher

In a clinical phase II study aclacinomycin A (Aela) and etoposide
(VP-16) were given in combination to 20 patients with acute
myeloid leukemia (AML) at advanced relapse. All patients had re-
cived a standardised first line and second line treatment and
were at refractory first relapse (n=4), second, third, or fourth
relapse (n=15) or at relapse after bone marrow transplantation
(n=1). Therapy consisted of Aela 60 mg/m² and VP-16 160 mg/m².
Both given from days 1 to 5. Complete remission (CR) was achieved
in 7 patients (35%). 2 cases obtained a partial remission (PR)
(10%). Five patients did not respond (25%) and 6 patients died
within 6 weeks after the onset of treatment (30%) and were con-
sidered as early death. Toxicity consisted mainly in nausea and
vomiting, mucositis, severe infections and liver enzyme eleva-
tions. Recovery of blood counts occurred at a median of 25 days,
the median time to CR or PR was 33 days. These data indicate a significant antileukemic activity of
Aela/VP-16 in heavily pretreated patients with advanced relapsed
AML and encourage the continuing application of the two drug com-
bination to substantiate these findings.

Department of Internal Medicine, University of Münster, Albert-
Schweitzer-Str. 33, D-4400 Münster, FRG

IMMUNOELECTRON MICROSCOPICAL ANALYSIS OF CD34 IN-
NERIALIZATION OF NORMAL MONONUCLEAR BONE MARROW CELLS
AND LEUKEMIC BLAST CELLS.
M. Hartl, G. Hehl, E. Beyer-Johannsèke, Ch. Schoppfin, M.
Hummel and E. Kurzle

The CD34 antigen (HPCA-1) is supposed to be a regu-
latory receptor molecule, although its structure does not
resemble any known receptor system. The aim of
our ultrastructural studies was to investigate whether
the CD34 surface antigen is modulated via receptor
mediated endocytosis as an indirect evidence for a
receptor function. Mononuclear bone marrow cells
(BMNC), blasts of the leukemic cell line KG-la and
of four acute leukemias were studied. Immunolabelling
was performed by an immunogold technique using a two
step labelling with the anti-HPCA-1 MoAb and a GAM-
gold (30nm) secondary antibody. To analyse receptor
mediated endocytosis cells were incubated in RPMI
for various time intervals at 37°C and 5% CO2. To
evaluate the surface antigen expression cells were
prefixed with glutaraldehyde and labelled at room
temperature in the presence of sodium azide. BMNC
were found to have a low antigen density combined
with a high rate of internalization. Immuno gold
complexes were localized in the characteristic struc-
tures related to receptor mediated endocytosis. Cells of
the KG-la cell line showed a much higher surface
antigen density, but an extremely low rate of internali-
zation. The four leukemias studied displayed differ-
sent surface antigen densities and rates of internali-
ization. In all cases high antigen density was related to
a low rate of endocytosis and vice versa. Taken
together, evidence was found that the CD34 surface
antigen is a receptor molecule. It remains open,
whether the impaired internalization by some leukemic
blasts, especially those of the KG-la cell line, is
due to an altered receptor function.

Present address: Dept. of Internal Medicine III, Univer-
sity Clinics Ulm, Robert-Koch-Str. 8, 7900 Ulm, FRG

407 COTOTOCY LYMPHOCYTES IN PATIENTS WITH ACUTE MYELOID
LEUKEMIA BEFORE AND AFTER CHEMOTHERAPY
E. Kaufhold, H. Gansbren, B. Wöhrmann, Th. Bührcher and W. Hiddemann.

Cytotoxic activity against allogeneic and autologous leukemic blasts has
been found in the peripheral blood of patients with acute myeloid leukemia
(AML) in remission. The effector cells have not been characterized. We have
examined the absolute and relative numbers of lymphocyte subpopulations
in 25 patients with newly diagnosed AML. All patients were treated
according to the protocol of the German Multicenter Study. Bone marrow
aspirates and peripheral blood samples were analyzed prior to therapy,
in aplasia, in complete remission, before consolidation therapy and prior to
the first maintenance therapy. The samples were prepared by the whole blood
lysis method. Cells were stained with combinations of monoclonal antibodies
against CD3, 4, 8, 16, 19, 56, 57 and the gamma/delta T cell
receptor complex, and were analyzed on a laser - equipped flow cytometer.
The relative numbers of lymphocytes in the different subpopulations
were compared with those in healthy controls. The data indicate a significant antileukemic activity of
the clinical course in patients with AML and large interpatient variation. Further
follow-up will allow correlation of these findings with response and
remission duration.

Dept. of Internal Medicine A, Albert-Schweitzer-Str. 33, 4400 Münster, FRG;
Department of Applied Physics, University Twente, Enschede, NL.

408 COLD AGGLUTININ AUTOIMMUNE HAEMOLYTIC ANAEMIA AS SEVERE COMPLIC-
ATION IN B-CELL ACUTE LYMPHOCYTIC LEUKAEMIA (B-ALL)
D. Sohngen 1, G. Meckenstock 1, A. Heyll 1, V. Runde 1, U. Stoffels 1,
W. Schneider 1, H.T. Brüster 1 and P. Werner 2

Autoimmune haemolytic anaemia (AIHA) is a well known complication in
patients suffering from malignancies. Up to now we have treated 5 patients
with acute lymphoblastic leukaemia - FAB-subtype L2 (B-ALL) with very
clear clinical outcome. In no case AIHA was found. So we present a case report
of a 27 y. old patient, whose B-ALL was not only complicated by leukaemic
malignancy, acute anemic renal failure according to tumour lysis syndrome,
but also severe cold agglutinin AIHA and without response after allogeneic bone
marrow transplantation (BMT). Acute intravascular haemolysis occured
three days after transfusion of 2 red blood cell concentrates (RBC) with
subsequent fall of hemoglobin from 151 to 61 g/l (max. serum bilirubin
54.7 μmol/l, ind. bilirubin 18.8 μmol/l). Direct antiglobulin test (DAT)
became positive (max. titer 1:16, using polyspecific antiglobulin serum) and
coating of red blood cells with C3d could have been detected (max. titer 1:8,
using monoclonal antibodies). The ether eluate was negative in antibody (AB)
screening test. AB-differentiation in patients serum revealed cold agglutinin
activity. Other reasons for haemolysis (e.g. anti-Jka/-Jkb or Donath
Landsteiner's bithemeral AB, bacterial, fungal and viral infections, secondary
neoplasia, paroxysmal nocturnal haemoglobinuria, rheumatism) could have
been excluded. Laboratory testing for compatibility of RBC was difficult for
various time intervals at 37°C and 5% CO2. To evaluate the surface antigen expression cells were
prefixed with glutaraldehyde and labelled at room
temperature in the presence of sodium azide. BMNC
were found to have a low antigen density combined
with a high rate of internalization. Immuno gold
complexes were localized in the characteristic struc-
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1 Medizin. Klinik und Poliklinik (Klinik A)
2 Abteilung für Transfusionsmedizin und Gerinnungswesen der Heinrich-
Heine Universität Düsseldorf, Moorstr.5, D-4000 Düsseldorf 1 (FRG)