Leukocyte-endothelial cell interactions and vascular injury in the earliest preclinical stages of atherosclerosis

Sir,
Atherogenic stimuli activate interactions between leukocyte-endothelial cell adhesion molecules, which are known to contribute to the inflammatory process. This has been observed in the advanced stages of atherosclerosis. Since few data are available on pre-clinical stages, we assessed the phenotypical expression of leukocyte adhesion molecules (CD11/CD18 complex) in subjects at risk of atherosclerosis.

Twenty men (age range 50-65 years) were recruited. General exclusion criteria were clinical signs, symptoms or a case history of atherosclerosis or related pathologies, recent infection, alcoholism, chronic disease or any other serious medical or surgical problem, pharmacological treatment. Inclusion criteria were one or more risk factors for atherosclerosis not requiring pharmacological therapy, hyperlipoproteinemia, diabetes mellitus, hyperlipoproteinemia. Standard ultrasound screening of the extracranial carotid tract showed a mean intimal thickness of 1.6-1.8 mm.

A healthy control group of 18 subjects with no risk factors for atherosclerosis and mean intimal thickness in the extracranial carotid tract ≤1.5 mm was also recruited. Blood samples were drawn from all patients and healthy controls.

Lymphocyte, monocyte and granulocyte expression of adhesion molecules was determined by indirect immunofluorescence. Each blood sample was incubated with purified monoclonal antibodies: anti-CD11a, anti-CD11b, anti-CD11c, anti-CD18 or with isotype-identical negative control antibody. After erythrocyte lysing, the cells were fixed in paraformaldehyde and stored at 4°C.

Flow cytometric analysis was performed using the Consort 30 program on a FACSscan flow cytometer. Lymphocytes, monocytes and granulocytes were identified from forward scatter/side scatter (FSC/SSC) dot-plot profiles. Distinct populations in criteria were clinical signs, symptoms or a case history of atherosclerosis or related pathologies, recent infection, alcoholism, chronic disease or any other serious medical or surgical problem, pharmacological treatment. Inclusion criteria were one or more risk factors for atherosclerosis not requiring pharmacological therapy, hyperlipoproteinemia, diabetes mellitus, hyperlipoproteinemia. Standard ultrasound screening of the extracranial carotid tract showed a mean intimal thickness of 1.6-1.8 mm.

A healthy control group of 18 subjects with no risk factors for atherosclerosis and mean intimal thickness in the extracranial carotid tract ≤1.5 mm was also recruited. Blood samples were drawn from all patients and healthy controls.

Lymphocyte, monocyte and granulocyte expression of adhesion molecules was determined by indirect immunofluorescence. Each blood sample was incubated with purified monoclonal antibodies: anti-CD11a, anti-CD11b, anti-CD11c, anti-CD18 or with isotype-identical negative control antibody. After erythrocyte lysing, the cells were fixed in paraformaldehyde and stored at 4°C.

Flow cytometric analysis was performed using the Consort 30 program on a FACSscan flow cytometer. Lymphocytes, monocytes and granulocytes were identified from forward scatter/side scatter (FSC/SSC) dot-plot profiles. Distinct populations in criteria were clinical signs, symptoms or a case history of atherosclerosis or related pathologies, recent infection, alcoholism, chronic disease or any other serious medical or surgical problem, pharmacological treatment. Inclusion criteria were one or more risk factors for atherosclerosis not requiring pharmacological therapy, hyperlipoproteinemia, diabetes mellitus, hyperlipoproteinemia. Standard ultrasound screening of the extracranial carotid tract showed a mean intimal thickness of 1.6-1.8 mm.

A healthy control group of 18 subjects with no risk factors for atherosclerosis and mean intimal thickness in the extracranial carotid tract ≤1.5 mm was also recruited. Blood samples were drawn from all patients and healthy controls.

Lymphocyte, monocyte and granulocyte expression of adhesion molecules was determined by indirect immunofluorescence. Each blood sample was incubated with purified monoclonal antibodies: anti-CD11a, anti-CD11b, anti-CD11c, anti-CD18 or with isotype-identical negative control antibody. After erythrocyte lysing, the cells were fixed in paraformaldehyde and stored at 4°C.

Flow cytometric analysis was performed using the Consort 30 program on a FACSscan flow cytometer. Lymphocytes, monocytes and granulocytes were identified from forward scatter/side scatter (FSC/SSC) dot-plot profiles. Distinct populations in criteria were clinical signs, symptoms or a case history of atherosclerosis or related pathologies, recent infection, alcoholism, chronic disease or any other serious medical or surgical problem, pharmacological treatment. Inclusion criteria were one or more risk factors for atherosclerosis not requiring pharmacological therapy, hyperlipoproteinemia, diabetes mellitus, hyperlipoproteinemia. Standard ultrasound screening of the extracranial carotid tract showed a mean intimal thickness of 1.6-1.8 mm.

A healthy control group of 18 subjects with no risk factors for atherosclerosis and mean intimal thickness in the extracranial carotid tract ≤1.5 mm was also recruited. Blood samples were drawn from all patients and healthy controls.

Lymphocyte, monocyte and granulocyte expression of adhesion molecules was determined by indirect immunofluorescence. Each blood sample was incubated with purified monoclonal antibodies: anti-CD11a, anti-CD11b, anti-CD11c, anti-CD18 or with isotype-identical negative control antibody. After erythrocyte lysing, the cells were fixed in paraformaldehyde and stored at 4°C.

Flow cytometric analysis was performed using the Consort 30 program on a FACSscan flow cytometer. Lymphocytes, monocytes and granulocytes were identified from forward scatter/side scatter (FSC/SSC) dot-plot profiles. Distinct populations in criteria were clinical signs, symptoms or a case history of atherosclerosis or related pathologies, recent infection, alcoholism, chronic disease or any other serious medical or surgical problem, pharmacological treatment. Inclusion criteria were one or more risk factors for atherosclerosis not requiring pharmacological therapy, hyperlipoproteinemia, diabetes mellitus, hyperlipoproteinemia. Standard ultrasound screening of the extracranial carotid tract showed a mean intimal thickness of 1.6-1.8 mm.

A healthy control group of 18 subjects with no risk factors for atherosclerosis and mean intimal thickness in the extracranial carotid tract ≤1.5 mm was also recruited. Blood samples were drawn from all patients and healthy controls.

Lymphocyte, monocyte and granulocyte expression of adhesion molecules was determined by indirect immunofluorescence. Each blood sample was incubated with purified monoclonal antibodies: anti-CD11a, anti-CD11b, anti-CD11c, anti-CD18 or with isotype-identical negative control antibody. After erythrocyte lysing, the cells were fixed in paraformaldehyde and stored at 4°C.

Flow cytometric analysis was performed using the Consort 30 program on a FACSscan flow cytometer. Lymphocytes, monocytes and granulocytes were identified from forward scatter/side scatter (FSC/SSC) dot-plot profiles. Distinct populations in criteria were clinical signs, symptoms or a case history of atherosclerosis or related pathologies, recent infection, alcoholism, chronic disease or any other serious medical or surgical problem, pharmacological treatment. Inclusion criteria were one or more risk factors for atherosclerosis not requiring pharmacological therapy, hyperlipoproteinemia, diabetes mellitus, hyperlipoproteinemia. Standard ultrasound screening of the extracranial carotid tract showed a mean intimal thickness of 1.6-1.8 mm.

A healthy control group of 18 subjects with no risk factors for atherosclerosis and mean intimal thickness in the extracranial carotid tract ≤1.5 mm was also recruited. Blood samples were drawn from all patients and healthy controls.

Lymphocyte, monocyte and granulocyte expression of adhesion molecules was determined by indirect immunofluorescence. Each blood sample was incubated with purified monoclonal antibodies: anti-CD11a, anti-CD11b, anti-CD11c, anti-CD18 or with isotype-identical negative control antibody. After erythrocyte lysing, the cells were fixed in paraformaldehyde and stored at 4°C.

Flow cytometric analysis was performed using the Consort 30 program on a FACSscan flow cytometer. Lymphocytes, monocytes and granulocytes were identified from forward scatter/side scatter (FSC/SSC) dot-plot profiles. Distinct populations in criteria were clinical signs, symptoms or a case history of atherosclerosis or related pathologies, recent infection, alcoholism, chronic disease or any other serious medical or surgical problem, pharmacological treatment. Inclusion criteria were one or more risk factors for atherosclerosis not requiring pharmacological therapy, hyperlipoproteinemia, diabetes mellitus, hyperlipoproteinemia. Standard ultrasound screening of the extracranial carotid tract showed a mean intimal thickness of 1.6-1.8 mm.

A healthy control group of 18 subjects with no risk factors for atherosclerosis and mean intimal thickness in the extracranial carotid tract ≤1.5 mm was also recruited. Blood samples were drawn from all patients and healthy controls.

Lymphocyte, monocyte and granulocyte expression of adhesion molecules was determined by indirect immunofluorescence. Each blood sample was incubated with purified monoclonal antibodies: anti-CD11a, anti-CD11b, anti-CD11c, anti-CD18 or with isotype-identical negative control antibody. After erythrocyte lysing, the cells were fixed in paraformaldehyde and stored at 4°C.

Flow cytometric analysis was performed using the Consort 30 program on a FACSscan flow cytometer. Lymphocytes, monocytes and granulocytes were identified from forward scatter/side scatter (FSC/SSC) dot-plot profiles. Distinct populations in criteria were clinical signs, symptoms or a case history of atherosclerosis or related pathologies, recent infection, alcoholism, chronic disease or any other serious medical or surgical problem, pharmacological treatment. Inclusion criteria were one or more risk factors for atherosclerosis not requiring pharmacological therapy, hyperlipoproteinemia, diabetes mellitus, hyperlipoproteinemia. Standard ultrasound screening of the extracranial carotid tract showed a mean intimal thickness of 1.6-1.8 mm.

A healthy control group of 18 subjects with no risk factors for atherosclerosis and mean intimal thickness in the extracranial carotid tract ≤1.5 mm was also recruited. Blood samples were drawn from all patients and healthy controls.

Lymphocyte, monocyte and granulocyte expression of adhesion molecules was determined by indirect immunofluorescence. Each blood sample was incubated with purified monoclonal antibodies: anti-CD11a, anti-CD11b, anti-CD11c, anti-CD18 or with isotype-identical negative control antibody. After erythrocyte lysing, the cells were fixed in paraformaldehyde and stored at 4°C.
were identified as risk factors for this phenomenon.1 Both our patients had a high percentage of BM blasts without karyotypic aberrations, but received higher G-CSF doses and demonstrated earlier progression. Although we cannot provide objective proof of a causal relationship between G-CSF and MDS acceleration, the clinical course of our cases is highly suggestive of in vivo priming of leukemic cell proliferation. We believe stricter G-CSF administration criteria are warranted in the heterogeneous group of high-risk MDS and advocate that this agent be used only in life-threatening infections under close monitoring.

ATHANASSIOS ZOMAS, MD
MARKOS FISIS, MD
KATY STEFANOU-DIOPFANOU, MD
Hematology Department, St. Anargyri General Cancer Hospital of Athens, Greece

References

Correspondence: Dr. A. Zomas, Hematology Department, St. Anargyri General Cancer Hospital, Kalyvaki-Nea Kifissia, Athens, 145-64, Greece. Tel. international +30.1.5148879. e-mail: zomatha@hol.gr

Chlamydia pneumoniae pneumonia with acute hemorrhagic pericarditis in patient with acute leukemia

Sir,

Chlamydia pneumoniae, a recently discovered pathogen, is mainly responsible for respiratory tract infections. It has also been associated with endocarditis and myocarditis,1,4 but there are no reports implicating C. pneumoniae in pericarditis. We present a patient with pneumonia and acute hemorrhagic pericarditis caused by C. pneumoniae.

A 27-year-old man was diagnosed with acute myeloblastic leukemia. The first cycle of chemotherapy according to the MRC 10 protocol resulted in complete remission. On day 2 following completion of the third cycle of chemotherapy (amsacrine, cytosine arabinoside, etoposide) he developed pancytopenia and his temperature rose above 39°C. Empirical therapy with amikacin and cefoperazone was initially successful. On day 20, a temperature of 39°C reappeared together with a dry, irritating cough. Bacterial cultures revealed methicillin-resistant Staphylococcus aureus and Candida krusei. Vancomycin and amphotericin B were started. Three days later X-rays chest, which had previously been normal, revealed bronchopneumonia of the right middle lobe. On day 27, the patient developed pericardial friction rub and pleural pain. Temperature had decreased to 37-38°C. Echocardiographic examination, which had been normal at admission, revealed pericardial effusion measuring up to 27 mm in depth. Repeated echocardiography showed fibrous strands attached to the pericardium. Because the patient’s condition was progressively deteriorating, erythromycin in doses of 0.5 g q6h IV was instituted on day 34. Blood tests indicated bone marrow regeneration. On day 40, the patient developed cardiac tamponade. Pericardiocentesis yielded 320 mL of sanguinous exudate, bacterial and fungal cultures of which were negative. Serologic tests for cardiotropic viruses, Epstein-Barr virus, cytomegalovirus, Mycoplasma pneumoniae, Legionella pneumophila, fungal antigens and polymerase chain reaction to Mycobacterium tuberculosis were all negative. The pericardial fluid was also analyzed with direct staining for C. pneumoniae and cultured.1 A direct immunofluorescence test using C. pneumoniae-specific monoclonal antibodies (Cellabs, Australia) was positive for chlamydial elementary bodies. Subsequent cultures of the pericardial effusion also contained C. pneumoniae elementary bodies. The IgG titre to C. pneumoniae determined by a microimmunofluorescence assay was 1:64, while no IgM were apparent. Two weeks after pericardiocentesis and initiation of erythromycin, echocardiogram and chest X-rays normalized. The patient was discharged after remaining good physical condition for two weeks, until his next cycle of chemotherapy. Unfortunately, he died several months later during first relapse of acute leukemia of an intracerebral hemorrhage.

In conclusion, Chlamydia pneumoniae should be suspected in patients with pneumonia and concurrent pericarditis, especially in those who are immunocompromized. Empirical therapy with erythromycin may be beneficial.

SAMO ZVER
MIRNA KORELJ
PETER MIRTAKOÆELJ
DEPARTMENT OF HEMATOLOGY, UNIVERSITY MEDICAL CENTER LJUBLJANA
ZALO KA 7, 1105 LJUBLJANA, SLOVENIA

References

Correspondence: Dr. Samo Zver, Dept. of Hematology, University Medical Center Ljubljana, Zalo ka 7, 1105 Ljubljana, Slovenia