Current Issue
Browse Issues
Search
About this Journal
Instruction to Authors
Online Submission
Subscription
Contact Us
RSS Feed

Acta Medica Iranica
2009;47(4) : 17-24

# Arsenic Trioxide Compound Modulates Multiple Myeloma Phenotypes: Assessment on Cell Line Models

MR Khorramizadeh, F Saadat, H Allahyary, S Sadeghian, A Sarrafnejad,A Mirshafiey, F Safavifar, K Alimoghaddam, A Ghavamzadeh, M Pezeshki

## Abstract:

Recent evidences suggest that multiple myeloma phenotypes (MMPs) are involved in the infiltration of multiple myeloma-affected marrow foci. In this study, the effects of arsenic trioxide on the invasive and angiogenic phenotypes of multiple myeloma (MM) cell line were assessed on a dose-response and time-course basis. Multiple myeloma cell line, Karpas 707, was treated with step-wise elevated concentrations of arsenic trioxide compound at 24, 48, and 72 h intervals. Cytotoxicity was assessed with a colorimetric assay. Potential antiinvasive phenotype was analyzed with MMP-2 zymography. To verify directly the anti angiogenic effect, F1 endothelial cell line was also treated with arsenic and the dose-dependent cytotoxicity was assessed with a colorimetric assay. Apoptotic properties of arsenic trioxide compound were investigated using TUNEL assay. The significant dose-dependent inhibitory effects of arsenic trioxide on MMP-2 were seen at given concentrations. Cytotoxicity analysis revealed much higher cell death than untreated cells ($P< 0.01$), both in Karpas 707 and F1 endothelial cell lines. Colectively, this study showed that arsenic trioxide might potentially elicit anti-invasive anti-angiogenesis properties in the treatment of myeloma dissemination process. In addition, the concurrent inhibition of MMPs activity and endothelial cell proliferation could compose the scenario of neoangiogenesis inhibition in the marrow-infiltrated foci.

## Keywords:

Karpas 707 ، MMP-2 ، Arsenic trioxide

TUMS ID: 2156

Full Text HTML Full Text PDF 328 KB

top ▲