三氧化二砷治疗复发及难治性血液病的疗效及作用机制

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Title: Efficacy and mechanism of arsenic trioxide in the treatment of relapsed and refractory hematological diseases

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摘要: 三氧化二砷（ATO）被认为是不同类型癌症治疗中的有效药物。它是目前治疗急性早幼粒细胞白血病（APL）最有效的药物，特别是对全反式维甲酸（ATRA）及常规化疗耐药的APL。此外，实验室数据表明ATO在多种血液病及实体肿瘤细胞系中也具有活性。但是，作用机制尚不完全清楚。高剂量的ATO引发细胞凋亡，而在较低浓度时，它诱导部分分化。ATO作用机制涉及对导致细胞凋亡的线粒体跨膜电位的影响。它还作用于半胱天冬酶，NF-κB核因子或促凋亡蛋白和抗凋亡蛋白的活性等。本文主要综述了ATO在治疗复发及难治性APL、FLT3-ITD突变的AML、慢性粒细胞白血病急变期、重型再生障碍性贫血以及复发或难治性淋巴瘤的疗效及作用机制。这将为以后的研究者开展相关临床实验提供借鉴。

Abstract: Arsenic trioxide (ATO) has recently been identified as an effective drug in different types of cancer therapy.It is currently the most effective drug for the treatment of acute promyelocytic leukemia (APL)，especially the form that is resistant to conventional chemotherapy with all-trans retinoic acid (ATRA).What is more，laboratory data suggest that ATO is also active when it comes to a variety of hematological and several solid tumor cell lines.However，the mechanism of action is not fully understood.ATO in high doses triggers apoptosis，while in lower concentrations it induces partial differentiation.The ATO mechanism of action involves effects on mitochondrial transmembrane potential which lead to apoptosis.It also acts on caspase，NF-κB nuclear factor or pro-apoptotic protein and anti-apoptotic protein activity，etc.This article reviews the efficacy and mechanism of ATO in the treatment of relapsed and refractory APL，FLT3-ITD mutation AML，chronic myeloid leukemia blast crisis，severe aplastic anemia，and relapsed or refractory lymphoma.This will provide reference for future researchers to carry out relevant clinical experiments.

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