

腫瘤治療新趨勢－標靶治療

A New Trend of Cancer Therapy: Targeted Therapy

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摘要

隨著對分子生物醫學的進步，有關細胞的過程被深入瞭解。科學家們針對這些腫瘤細胞分別發展出一系列標靶治療藥物；而這種使用標靶性藥物達成抗腫瘤目的的治療即稱為標靶治療。這些藥物已於近年來獲得美國食物藥品管理局(Food and Drug Administration, FDA)核准上市。抗腫瘤性標靶治療依其作用機轉，可分為四大類：1. 蛋白－酪胺酸激酶接受器抑制劑(Protein-tyrosine kinase receptor inhibitors)是藉由阻斷腫瘤細胞內的訊息傳遞路徑而停止腫瘤細胞的生長和成熟，如：Gefitinib(Iressa)。2. 血管新生抑制劑(Angiogenesis inhibitors)則是藉由抑制血管新生的過程，阻斷癌細胞的生長及轉移現象，如：Bevacizumab(Avastin)。3. 蛋白質體抑制劑(Proteasome inhibitors)是藉由干擾腫瘤細胞的蛋白質清除能力而造成腫瘤細胞的死亡，如：Bortezomib(Velcade)。4. 免疫治療(Immunotherapy)的機轉就是藉由科學家所設計出的單株抗體(monoclonal antibodies)攻擊和它所配對的腫瘤抗原，而造成腫瘤細胞死亡，如：Rituximab(Rituxan)。臨床研究報告已證實這些標靶性藥物和傳統具有細胞毒性的化學治療相較之下，病人對藥物耐受性較好，副作用較低，是腫瘤治療的一大進步。

Abstract

Due to the improvements of molecular biologic medicine, researches of the cell cycle have been advanced. By targeting these molecules specific to tumor cells, a series of novel biologic agents have been developed. These targeted agents have been approved to be marketed by Food and Drug Administration (FDA) in the US. The targeted agent can be divided into four categories based on pharmacologic mechanisms: 1. Protein-tyrosine kinase receptor inhibitors: Through blocking the message transduction pathways of the tumor cells, protein-tyrosine kinase receptor inhibitors limit tumor cells from growth and mutation, e.g. Gefitinib (Iressa). 2. Angiogenesis inhibitors: Blocking the angiogenesis process, angiogenesis inhibitors could stop the growth and metastasis, e.g. Bevacizumab (Avastin). 3. Proteasome inhibitors: Proteasome inhibitors could interrupt the formation of protein of tumor cells and cause the death of the cells, e.g. Bortezomib (Velcade). 4. Immunotherapy: The mechanism of action of immunotherapy is monoclonal antibodies, attacking the specific tumor antigens, e.g. Rituximab (Rituxan). Comparing targeted therapy with traditional cytotoxic chemotherapy, clinical reports verified that patients endured

better drug tolerance and fewer side effects. Targeted therapy is an advanced improvement on cancer treatment.