

## 分子靶向治疗在前列腺癌中的研究进展

### Research Progress on Molecular Targeting therapy in Prostatic Cancer

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**摘要:** **目的** 探讨和分析分子靶向治疗在前列腺中的治疗情况。**方法** 针对分子靶向治疗的情况和治疗效果进行分析, 主要了解分子靶向治疗在前列腺疾病中的进展情况, 以此找到最佳的治疗方式。**结果** 靶向治疗是以肿瘤细胞的特有位点作为治疗靶点, 在纠正病变、稳定细胞、发挥更强的抗肿瘤活性的同时, 能够对正常细胞减少毒副作用。由于我们对于肿瘤发生发展的分子途径认知的逐渐提高, 以及更好的利用这些途径作为有效的药物作用靶点, 我们已经看到了越来越多的分子靶向药物的开发和生产随之增加。**讨论** 前列腺癌是目前在全球男性中第二位最常见的肿瘤, 而分子靶向药物对前列腺的治疗起作用的不同的靶向机制, 值得医疗机构推广使用。

**Abstract:** **Objective -** To investigate and analyze the treatment of molecular targeting therapy in the prostate. **Methods -** The results of molecular targeting therapy and treatment were analyzed, and the progress of molecular targeting therapy in prostate diseases was mainly discussed to find the best treatment method. **Results -** Taking specific locus of tumor cells as the therapeutic target, the targeting therapy can reduce the toxic and side effects of normal cells while correcting lesions, stabilizing cells and exerting stronger anti-tumor activity. Due to our increased awareness of the molecular pathways of tumor occurrence and development, and the better use of these pathways as an effective drug targets, we have seen increasing developments and productions of molecular targeting drugs. **Discussion -** Currently, prostate cancer is the second most common tumor attacking men in the world. The molecular targeting drugs have different targeting mechanisms for the treatment of prostate, which is worthy of promotion and application by medical institutions.

**关键词:** 前列腺癌; 分子机制; 靶向治疗

**Keywords:** Prostate Cancer; Molecular Mechanism; Targeting Therapy

**前言:** 目前针对我国社会人群身体健康状况的调查能够看出, 全球的男性中前列腺疾病已经成为第二大常见肿瘤, 如果演化成个性肿瘤造成死亡的几率在全国排名第六位。针对前列腺疾病发病几率的情况进行研究和分析, 我国治疗这一疾病的能力, 虽然不及西方发达国家, 但是随着我国生活水平和治疗技术的有效提高, 这一工作也逐渐呈现出上升的状态, 靶向治疗就是一肿瘤细胞为特点, 作为治疗的基本靶向, 以此在纠正病变和稳定细胞发展的过程中, 发挥出最强的抗肿瘤活性因子, 同时能够有效减少正常细胞中毒副作用的反应。而在这样的情况下, 针对就肿瘤出现的分子途径认知的提高, 能够更好地采用有效方式, 把药物作为靶向点, 对肿瘤的减少作出最大的治疗贡献。

**Foreword:** At present, from the health survey on population in China, It can be found that prostate cancer has become the second most common tumor attacking men in the world. If it develop into personal tumor, the probability of death caused by it will rank sixth in China. According to the research and analysis of the incidence of prostate disease, although our ability to treat the disease is inferior to the Western developed countries, however, with the effective improvement of China's living standards and effective treatment technology, this work has gradually shown in a rising trend. Characterized by

taking tumor cell as basic treatment target to play a strongest anti-tumor activity factor during correcting lesions and stabilizing the development of cells, the targeting therapy can effectively reduce toxic and side reactions of normal cells. In this case, with cognitive improvement on the molecular pathways of the tumor, it is possible to make an effective way to make the greatest contribution to reduction of the tumor by using the drug as a target point.

## 一、以肿瘤细胞为靶向治疗

### 1. Regarding tumor cells as targeting therapy

在目前的医疗机构中, 针对肿瘤细胞进行靶向治疗, 主要就是把肿瘤细胞作为靶细胞, 利用单方面的克隆抗体技术或者是结合系性的细胞毒性药物, 以及放射性的核心元素为基础提供药物, 其中特异性的给药方式, 能够直接地结合肿瘤部位所呈现出的抗议性原子或者肿瘤相关的抗原因素, 达到杀灭肿瘤的最终目的。近些年来, 我国社会中前列腺疾病成为比较常见的男性疾病, 而前列腺的特异性, 主要是由于其抗原性膜细胞、前列腺肝细胞以及前列腺酸性磷酸酶所组成。在前列腺细胞中, 其中的细胞膜和细胞因子有着一定的特异性。所以, 这也是目前医疗机构中应用靶向治疗干预前列腺细胞因子, 达到治疗目的的主要原因<sup>[1]</sup>。

In the current medical institutions, targeting therapy against tumor cells takes mainly the tumor cells as the targeted cells, that is, by using unilateral cloning antibody technology or a combination of cell cytotoxic drugs, provide drugs based on the radioactive core elements. The specific way of administration can directly bind to the protesting protozoa or tumor-related antigen factors shown by the tumor site, to achieve the ultimate goal of killing the tumor. In recent years, the prostate disease has become a common male disease in China, and the specificity of the prostate comprises mainly of its antigenic membrane cells, prostate cells and prostate acid phosphatase. The cell membrane and cytokines in the prostate cells have certain specificity. Therefore, this is the main reasons why the current medical institutions apply targeting therapy to intervene prostate cell factors to achieve the purpose of treatment <sup>[1]</sup>.

在前列腺细胞中, 前列腺所具有的特异性抗原因素, 是指一种既存在叶酸的水解酶, 也有着跨膜蛋白等正常细胞的因子结构。而针对正常的前列腺上皮细胞进行分析, 其中包含肾、唾液腺、十二指肠以及中枢神经系统和周围神经系统的最低表达方式。如果前列腺中细胞的密度过高, 则表示其前列腺的分期以及转移程度形成了正比, 造成细胞癌的几率就比较大, 而功能性在前列腺中, 造成细胞癌的情况尚未可知。所以能够看出前列腺中的特异性膜抗原, 能够在这聊过程中标记成前列腺上皮细胞的靶分子。同时在相关的实验中, 人们也利用具有前列腺细胞的克隆繁殖小鼠, 作为前列腺模型。其中通过靶细胞的植入, 对小鼠的前列腺进行疾病的治疗, 首先需要载入病毒体, 从而更好地激发销售的淋巴系统, 最终使用靶细胞进行治疗。得出的结果能够看出, 在实验的过程中由于诱导了免疫系统, 反而导致小鼠的症状瘤生长得到抑制, 而其中刘也在正常生长的情况下逐渐减小。得到这样的结果之后就能够看出, 靶向治疗对于前列腺疾病的一直有着良好的作用, 同时有学者通过对单克隆抗体的研究, 了解到一直人类前列腺细胞的赖以生存的因素, 这针对于传统的前列腺治疗药物, 更减少了其中的毒副作用, 但是这一研究依然处于进展阶段<sup>[2]</sup>。

In prostate cells, the specific antigen factor existing in prostate is a kind of both hydrolase containing folic acid and factor structure has a transmembrane protein and other normal cells. We analyzed the normal prostate epithelial cells, including the kidney, salivary glands, duodenum and the central nervous system and the lowest expression of the peripheral nervous system. If the density of cells in the prostate is too high, then the staging of the prostate and the degree of metastasis formed a proportional

ratio, resulting in a relatively high probability of cell cancer, and functional in the prostate, causing cell carcinoma has not been yet known. It is possible to see the specific membrane antigen in the prostate, which can be labeled as the target molecule of prostate epithelial cells during this conversation. At the same time in the relevant experiments, we also used clonal breeding mice with prostate cells as the prostate model. We treated the prostate of the mouse through the implantation of the target cell. At first, it is required to load the virion, thereby to stimulate better the solid lymphatic system, and ultimately use the target cells for treatment. The results It can be seen from the obtained results that in the course of the experiment, due to the induction of the immune system, on the contrary, it led to inhibition of the growth of the symptom tumor of mouse, the tumor also gradually reduced under normal growth. After obtained this result, it can be seen that targeting therapy has always played a good role for prostate disease. Meanwhile, through the monoclonal antibody research, some scholars has understood the survival factors of human prostate cells, which also reduces the side effects of the traditional prostatic treatment drugs. However, this study is still in progress<sup>[2]</sup>.

## 二、以肿瘤血管生成成为靶向治疗

### 2. Targeting therapy on tumor angiogenesis

而通过医疗机构中, 针对实体肿瘤的研究能够发现, 其所具有的一个主要特点就是异常的血管分布情况, 这也被称为肿瘤血管。肿瘤血管的丰富程度, 直接决定了肿瘤的生长速度, 以及向远处转移所存在的风险, 对于肿瘤微血管的密度, 采用免疫组织的化学检测。通常就能够预测到个性潮流的发展和预后结果, 针对肿瘤血管进行靶向治疗, 还需要把血管作为其靶心, 并且当成重点药物输送对象, 以此把前列腺的肿瘤进行转移, 找到抗肿瘤的血管<sup>[3]</sup>。

In the current medical institutions, targeting therapy for tumor cells as the target cells, the use of unilateral cloning antibody technology or a combination of cytotoxic drugs, as well as radioactive core elements based on the provision of drugs, Way of administration, can directly bind to the tumor site of the protest of the protozoa or tumor-related antigen factors, to achieve the ultimate goal of killing the tumor. In recent years, the prostate disease in our society has become a common male disease, And the specificity of the prostate, due by its antigenic membrane cells, prostate cells and prostate acid phosphatase composition. In the prostate cells, in which the cell membrane and cytokines have certain specificity, therefore, this is the current medical institutions in the application of targeting therapy to intervene in prostate cell factors, to achieve the purpose of treatment of the main reasons [1].

From the study on solid tumors in medical institutions, it can be found that its major feature is the abnormal distribution of blood vessels, which is also known as tumor blood vessels. The degree of tumor blood vessels directly determines the rate of tumor growth, as well as the risk of distant metastasis, the density of tumor microvessels, the use of immunohistochemical detection. It usually can predict the development of personality trends and prognosis of the target for the treatment of tumor blood vessels, but also the need for blood vessels as its bull's-eye, and as a key drug delivery object, in order to transfer the prostate tumor, to find anti-tumor blood vessels<sup>[3]</sup>.

在血管内生长是目前唯一被证实的, 最重要的血管生成信号蛋白, 其能够通过血管内部皮细胞的有效控制, 以及增长保证其生存性质, 抑制住进血管肿瘤的发生。这样不论促进了肿瘤的生长速度, 还是促进了肿瘤的转移速度, 都能够在很大程度上抑制肿瘤的发生, 利用免疫组织化学方法对前列腺中, 献出的内皮生长因子进行分析, 能够看出, 其呈现出很强的多变性, 但是总体的水平却依然浮动在 40% 到 100% 之间。所以能够断定, 血管生长那批因子可以抑制肿瘤血管

的生成,同时也能够有效阻止肿瘤的生长和转移。在这样的情况下,依然使用销售模型进行实验,能够发现销售的肿瘤体积和重量明显减少。同时,其蛋白印迹的结果也证明血管生长和相关激素的使用,能够有效的,促进人类前列腺细胞的移植,也能够抑制生长的速度,进一步的免疫组织化学分析显示,使用黄铜木质素能够有效抑制肿瘤血管的生成,这也是靶向治疗一项最大的收获<sup>[4]</sup>。

At present, the intravascular growth is the only confirmed and most important angiogenic signaling protein, which can pass through the effective control of intravascular endothelial cells, as well as growth to ensure its survival properties and inhibit the occurrence of ingestion of vascular tumors. This can not only promote the tumor growth rate, or promote the rate of tumor metastasis, can largely inhibit the occurrence of cancer, the use of immunohistochemical method of prostate, the contribution of endothelial growth factor analysis, can be seen , Which showed a strong variability, but the overall level is still floating between 40% to 100%. So it can be concluded that the blood vessel growth factor that can inhibit the formation of tumor blood vessels, but also can effectively prevent tumor growth and metastasis. In this case, the sales model is still used to experiment, can be found in sales of tumor volume and weight significantly reduced. At the same time, the results of its western blot also demonstrate that vascular growth and the use of related hormones can be effective in promoting human prostate cell transplantation and also inhibit the rate of growth, further immunohistochemical analysis shows that the use of brass lignin can be effective Inhibition of tumor angiogenesis, which is also the largest treatment of targeted therapy<sup>[4]</sup>.

### 三、以肿瘤细胞信号通路为靶向治疗

#### 3. Targeting therapy on tumor cell signaling pathway

在使用靶向治疗对前列腺疾病进行细胞的,分析和移除过程中,细胞外因子通过与细胞受体的结合,能够保证细胞内部产生一系列的生物化学反应。这一过程也被称为细胞的信号转移,细胞信号转一过程中,出现异常的主要原因就是,引起肿瘤的恶性程度增大,同时机体的侵扰,也会逐渐变强。随着近年来我国对分子肿瘤学,分子生物学的研究,肿瘤的信号通路作为研究机制也逐渐变得清晰,所以在这样的情况下,针对肿瘤的信号通路为靶点,以此进行抗肿瘤治疗,也能够取得良好的进步。

在这其中,细胞外因子信号通路,是前列腺细胞中非常重要的信号转导通路,一般在前列腺患者出现最希望活动异常的现象就代表患者,即将会出现,前列腺疾病,其能够参与多种生物的活动,包括细胞的代谢和凋亡,还有细胞周期的条件以及前列腺发生转移,化疗中的重要作用。

During the use of targeting therapy for prostate disease cells, analysis and removal process, the extracellular factor through the binding with the cell receptor, to ensure that the cells produce a series of biochemical reactions. This process is also known as cell signal transduction, the cell signal to a process, the main reason for the emergence of abnormalities is caused by increased degree of malignancy of the tumor, while the body's invasion, will gradually become stronger. With the study of molecular oncology and molecular biology in recent years, the signal pathway of tumor has become clear as the research mechanism. Therefore, in this case, the signal pathway of tumor is the target, Treatment, but also can make good progress.

**结论:**在我国社会中男性所承担的压力,往往要比女性大很多,男生需要支撑起一个家庭,所以不论是在思想上还是在身体上,男性的身体健康状况远不如女性。现阶段,传统的前列腺癌治疗

方法手术，放疗，化疗，激素疗法，副作用很大，容易复发，而且严重影响人们的身体健康和生活质量。而靶向治疗则是在这样的情况下所提出的一种最新的前列腺治疗方式，主要就是把肿瘤作为最终的靶心，局部病灶注射给药或者向周围进行给药，保证药物能够通过靶心直达患处，这样能够在根本上减少肿瘤恶化的情况，甚至能在很大程度上帮助肿瘤消除，保证男性的前列腺疾病得以治疗。这也是一项最新的科学研究技术，同时也受到了男性患者的广泛关注和欢迎，所以靶向治疗能够把我国医疗事业带上一个最新的高峰。

**Conclusion:** The pressure on a man is often much larger than a women in China. A man needs to support a family, so whether in thought or in the body, the male health is far less than women. At this stage, the traditional treatment of prostate cancer surgery, radiotherapy, chemotherapy, hormone therapy, side effects are large, easy to relapse, and seriously affect people's health and quality of life. And targeted therapy is in this case put forward a new way of treatment of prostate, mainly to the tumor as the final bull's-eye, local lesions injection or to the surrounding administration, to ensure that drugs can pass through the bull's eye directly to the affected area, Which can fundamentally reduce the tumor deterioration of the situation, and even to a large extent to help eliminate the tumor to ensure that men with prostate disease to be treated. This is also a new scientific research technology, but also by the male patients of widespread concern and welcome, so targeted treatment can bring our medical cause to the latest peak.

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