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The Effects of Netrin-1 in Patient with Peripheral Neuropathy

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Abstract

The Netrin-1 is a molecule of the 63KD-expressible laminin-dependent molecule secreted by neurons in the midline of the ventricular tube of the vertebrate neuronal tube and is involved in the growth and differentiation of the nervous system as well as angiogenesis as an axonal conduction molecule. The topical use of these adhesives over the past three decades has had a significant effect on reducing the volume of bleeding and accelerating tissue repair and reducing the risk of invasive surgeries and their complications, even in the treatment of hemophilia, it is necessary to use blood and coagulation products This product reduces patient complications and costs. These components are harvested from the stored plasma on the day of operation, and after mixing in the operating position, they coagulate after approximately 10 seconds and cause adhesion, prevent bleeding and neural tissue repair.

Keywords: Netrin-1; Neural tissue; Peripheral neuropathy

1. Introduction

The Netrin-1 is a molecule of the 63KD-expressible laminin-dependent molecule secreted by neurons in the midline of the ventricular tube of the vertebrate neuronal tube and is involved in the growth and differentiation of the nervous system as well as angiogenesis as an axonal conduction molecule [1]. The neurons of the posterior complex send their axons to special centers in the gray sphincter body. During the development of the fetus, axons develop along the lateral margin of the spinal cord [2]. In the growth of the fetal spinal cord, the niter-1, with its effect on the receptors in neurons axons, directs them to the lateral lateral margin of the spinal cord [3].

The Netrin-1 is a member of the family of homologous molecules: Deleted in Colorectal Cancer (DCC) and Uncoordinated-5 homolog (UNC5H) include UNC5H2, UNC5H1, UNC5H3 and UNC5H4. The Netrin-1 and their receptors are expressed in non-neural tissues such as pancreas, lupus and lung glands [4]. Deleted in Colorectal Cancer (DCC) receptors and Uncoordinated-5 homolog (UNC5H), are connected to the Netrin-1 and involved in axonal guidance. They also play a role in regulating the angiogenesis and homeostasis of various tissues. Deleted in Colorectal Cancer (DCC) and Unc-5 homolog receptors in the absence of the Netrin-1, initiate pro-apoptotic signals, thus acting similar to tumor suppressors. Pro-apoptotic signals generated by Deleted in Colorectal Cancer (DCC) receptors and (UNC5H) Unc-5 homolog are protective mechanisms for tumor growth and metastasis [5].

The latter receivers have a dual role in dealing with the Netrin-1, so that by binding the Netrin-1 to their receiver, the signal of cellular survival and proliferation is transmitted, while in the absence of the latter, it induces cell death [6, 7]. The presence of the DCC ligand, the Netrin-1, is necessary to control apoptosis [8, 9]. The pro-apoptotic activity of DCC or UNC5H has no linkage to the ligand, not only in the neuronal cell line used in vitro, but also in most neuronal ex vivo studies [10, 11], or in animal models used in vivo, such as Mice, chickens and zebra fish are shown by disabling the Netrin-1, receptors, or both [12-14]. The most commonly used anti- both the DCC and UNC5H2 receptors inhibited the pro-apoptotic effects of these two receptors [15]. Netrin-1 acts as a protector for neurons and inhibits apoptosis in terms of brain damage. These effects are regulated in the nervous system through the interaction of the lowest -1, a glycoprotein secreted, and DCC receptor [16-20].

2. Material and Methods

Netrin-1 is a kind of biological product. The topical use of these adhesives over the past three decades has had a significant effect on reducing the volume of bleeding and accelerating tissue repair and reducing the risk of invasive surgeries and their complications, even in the treatment of hemophilia, it is necessary to use blood and coagulation products This product reduces patient complications and treatment costs [21]. The basis of the production of these adhesives is the regeneration of the coagulation process by separating and then mixing the two components of the fibrinogen and active human thrombin plasma [22]. It should be noted that taking fibrin glue from human fibrinogen and bovine thrombin is not recommended because of the complications of cow's thrombin, such as severe allergies, and the stimulation of anti-Factor antibody production and increased risk of other bleeding [23].

Recently, however, netrin-1 and fibrinogen have been prepared without the need for active thrombin [24]. In addition to the two components, the adhesive contains other protein components, including fibronectin and factor 13, which accelerates the tissue repair and the strength of the clot [25]. Sometimes, by adding a condensed platelet to the above compound, you can increase the repair power of these adhesives [26]. In the term, this type of product is called a fibrinous platelet adhesive or a mixture of a platelet gel and a fibrin adhesive [27].

3. Results

Netrin-1 and fibrinogen are combined plasma, commercial industrial adhesives after refining hundreds of liters of human plasma [28]. These types of adhesives, despite the high and relatively constant concentrations of fibrinogen and thrombin, are also used Simple and consistency was not favored by developing countries because of high prices and the potential for transmission of infections from aggregate plasma [29].

Netrin-1 and fibrinogen can be prepared from a human plasma doner [30]. Autologous adhesives generally do not pose a risk of potentially cumulative commercial adhesives, and are commercially economical for commercial adhesives. In the preparation of these glues, which are also known as blood bank fibrin adhesives, various techniques and special tools and materials are used, some of which, therefore, have the registered name of a business specializing in that method or tool [31].

It should be noted that in the preparation of homologous adhesives, there is no need to perform a plasma phase. Therefore, it is less costly than autologous glue, and secondly, it can be used for a variety of patients and consumers regardless of age, weight, and clinical conditions [32]. Although quarantined plasma is continuously measured, the safest plasma is known, but it still has a risk. There is potential for infection transmission [33].

4. Discussion

The use of this type of adhesive in the past 3 to 4 decades, especially in eye surgery, urology, orthopedics, restorative, and dentistry has been welcomed [34]. Even these adhesives can be effective in inherited bleeding disorders [35]. Industrial products from the combined plasma received approval from the FDA in late 1999 and a decade earlier in Europe [36]. However, due to the possibility of transmission of infectious viral infections and perions, as well as high prices, it was not favored in developing countries [37]. Currently, due to the positive and beneficial effects of adhesives fibrin glues in different surgical procedures, autologous preparation of the patient's own plasma The world is welcomed [38].

Netrin-1 and fibrinogen has the following components: 1. A fibrinogenic component with an initial concentration of 200 70 mg per ml, a final volume of about 5 ml and a secondary concentration of about 100 40 mg/ml. The thrombin component contains a concentration of about 70 to 50 units per milliliter and a volume of about 5 to 7 centimeters. Of course, in some clinical conditions, the third component is a platelet that contains specific growth factors [39]. These components are harvested from the stored plasma on the day of operation, and after mixing in the operating position, they coagulate after approximately 10 seconds and cause adhesion, prevent bleeding and tissue repair [40].

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