

тверждается увеличением доли клеток, находящихся в состоянии раннего апоптоза, частоты микроядер и наличием фрагментированной ДНК.

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### **THE ROLE OF RISK FACTORS THAT CAN AFFECTING THE WOUND HEALING PROCESS**

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#### ***Introduction***

Wound healing is a biological process in the human body. Due to the tissue injury anatomical structure and function of the body changed [2]. Due to the wound healing, anatomic structure and function of body part changed using a several types of factors. There are 3 types of wound healing, depending on treatment and wound type. These are called primary, secondary and tertiary wound healing. Also biologically, 3 phases of wound healing were recognized and defined: hemostasis, inflammatory and proliferative phase [3].

Hemostasis is the process of the wound being closed by clotting. Hemostasis starts when blood leaks out of the body. The first step of hemostasis is when blood vessels constrict to restrict the blood flow. Then platelets stick together in order to seal the break in the wall of the blood vessel. As a result, coagulation occurs and reinforces the platelet plug with threads of fibrin which are like a molecular binding agent. The platelets adhere to the sub-endothelium surface within seconds of the rupture of a blood vessel's epithelial wall. After that, the first fibrin strands begin to adhere in about sixty seconds. As the fibrin mesh begins, the blood is transformed from liquid to gel through pro-coagulants and the release of prothrombin. The formation of a thrombus or clot keeps the platelets and blood cells trapped in the wound area [1]. The thrombus is generally important in the stages of wound healing but becomes a problem if it detaches from the vessel wall and goes through the circulatory system, possibly causing a stroke, pulmonary embolism or heart attack. Inflammatory phase is the second stage of wound healing and begins right after the injury when the injured blood vessels leak transudate (made of water, salt, and protein) causing localized swelling [6]. Inflammatory phase controls bleeding and prevents from infection. The fluid engorgement allows healing and repair cells to move

to the site of the wound. During the inflammatory phase, damaged cells, pathogens, and bacteria are removed from the wound area. These white blood cells, growth factors, nutrients and enzymes create the swelling, heat, pain and redness commonly seen during this stage of wound healing. Inflammation is a natural part of the wound healing process and only problematic if prolonged or excessive [7].

The proliferative phase of wound healing is when the wound is rebuilt with new tissue made up of collagen and extracellular matrix [2]. In the proliferative phase, the wound contracts as new tissues also make a new network of blood vessels. So that the granulation tissue can be healthy and receive sufficient oxygen and nutrients. Myofibroblasts cause the wound to contract by gripping the wound edges and pulling them together using a mechanism similar to that of smooth muscle cells [8].

Also there are some intrinsic and extrinsic factors that affect the wound healing. Intrinsic factors include: increased age, obesity, nutritional state and chronic diseases. Extrinsic factors include: smoking, mechanical stress, moisture, infections and chemical stress [2].

### **Objectives**

To study about the role of risk factors that can provoke the inability of post-operative wound healing process, after surgical treatment among patients treated in 2021 in the Gomel Regional Hospital.

### **Materials and methodology:**

Anamnesis of 50 patients with a mean age of 64 years were taken from the Gomel Regional Hospital. Among 50 patients (80% patients have less than 10 days of recovery period and other 20% have long recovery period due to some other disease conditions). An analysis of modern literature data from specialized manuals and journals was also performed.

### **Research results and discussion**

In 2021, 50 post-operative patients were victims with or without acute/chronic disease condition of abdominal or lower extremities wound. Among this group, 10 patients (20%) have prolonged wound healing periods 15–35 days. Other 80% have less than 10 days of recovery period associated without any chronic or acute diseases. Such as any blood disorders (anemia), diabetes mellitus, heart disease or any infectious disease.

From the 10 patient's case history associated with Diabetes mellitus 20%, moderate chronic anemia 40%, IHD 20%, COVID 19-pneumonia 10% and other diseases 10%. Also some of them were taken long periods without any of this reasons. That revealed as effect of extrinsic factors. Example for the long term use of alcohol, smoking etc.

Right posterolateral region of the abdominal wall (28% of cases) wound took 35 days (maximum days) to heal because of Arterial hypertension (2 stage) and diabetes mellitus type.

Due to COVID19 mild form of SARS, community-acquired poly-segmental pneumonia, hypostatic moderate course of COPD, moderate chronic anemia (12%) patients were taken 23 days (minimum days) to heal.

### **Conclusion**

The wound healing is tissue repair following an injury. It is an active process. The first phase is the inflammation, followed by a stage of fibroplasia, tissue remodeling and scarring. During this period various mechanisms occur. Chemical signals that can balance the regular movement. Proliferation, and differentiation of cells. That production and degradation of ECM proteins [7]. These proteins directly affect the cellular events and modulate cell responsiveness to soluble growth factors. The perfect healing in periodontics should start to the adequate function. It can cause severe health problems. If the thrombus becomes away from the vessel wall and travels through into the circulatory system. If it reaches the brain, heart or lungs, it

can cause stroke, heart attack and pulmonary embolism respectively. However, without this process, the healing of a wound would not be possible [8]. If the blood does not clot sufficiently, it may cause bleeding disorders such as hemophilia. Over-active clotting can also cause problems; thrombosis. When blood clots form abnormally, it can potentially cause embolisms. Blood clots break off and later it will become enter into the vein or artery. Hemostasis disorders can evolve for several causes. They may occur due to factor error or else deficiency of chemical mediator's also chronic disease condition with aging [7].

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### **ОЦЕНКА СОСТОЯНИЯ ЗДОРОВЬЯ ДЕТЕЙ, РОДИВШИХСЯ НЕДОНОШЕННЫМИ**

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#### **Введение**

Благодаря успехам неонатальной интенсивной терапии и реанимации за последние десятилетия увеличилась выживаемость детей из групп высокого риска, в том числе, родившихся недоношенными.

Эти дети составляют группу высокого риска возникновения у них в дальнейшем нарушений соматического, неврологического характера, что составляет базу для возникновения различного рода отклонений, в том числе и в психическом развитии, а в более старшем возрасте — возникновение хронических заболеваний, например, таких, как диабет, ожирение, артериальная гипертензия.

Причины, способствующие рождению недоношенных детей, можно разделить на три группы:

1. Социально-биологические причины. Это юные или возрастные беременные, низкий рост, инфантильное телосложение беременных, многоплодные роды.

2. Социально-экономические факторы. Сюда относят низкий уровень жизни, низкое материальное обеспечение и, вследствие этого, неполноценное питание матери, неудовлетворительные жилищно-бытовые условия, тяжелый физи-