

## **REVUL®: is designed to save lives of our soldiers**

According to the world statistics, the death on the battlefield is caused by the loss of blood in 70% of cases. Therefore, modern haemostatic products should be in the individual first-aid kit of every serviceman. The first domestic haemostatic product REVUL manufactured by Yuria-Pharm has appeared on Ukrainian market.

The word “REVUL” comprises of Latin roots. Prefix “re”- signifies renewal, i.e. an action that is happening again. A “vulnus” in Latin means injury. This how it became possible to give medicinal product a name that reflects the way it acts while sounding different from its analogues.

We had no intention of being at war. We were not ready. But for a year now the whole society is working to help the army to become a truly battleworthy force, and, among other things, is establishing a decent medical provision. As haemostatic products which military first aid kits of Soviet times were stocked with do not meet modern requirements and cannot help in case of significant wound, and haemostatic products accepted as standard by NATO became the focus of attention. The basic principle of such haemostatics (or haemostops) is absorption of moisture and rapid formation of a clot that prevents the leakage of blood. These haemostatics (British Celox and American QuikClot) were designed to stop the bleeding in places where tourniquet cannot be applied, and so that in case of limb injuries it would be possible to loosen the tourniquet, restore blood flow and avoid amputation.

Doctors noticed side effects of some haemostatics, in particular, burns; public officials complained about the high cost of imported drugs. But volunteers began to raise funds and, while Celox had not been registered in Ukraine, seek ways to buy it abroad and to deliver this haemostatic to our soldiers as soon as possible.

Talks about the need to come across a domestic analogue to this much-needed product last until today. But by now, the only pharmaceutical company that fully turned this idea into reality, i.e. designed, tested and registered a new haemostatic product, is our Yuria-Pharm. So REVUL came into the market and first samples of this vital product have already been delivered to the front line.

### **Oleksandr Maliutin, product-manager of Yuria-Pharm Corporation:**

"Today you can buy a number of imported products like Celox, or its American, Austrian, Czech or Russian analogues. Among domestic developments, there are biological products that are used in surgical in-patient departments. However, these are biological products that require special storage conditions, as well as their packaging and pharmaceutical forms are not intended for use in the field. It should also be noted that there are a lot of talks in the media about some new haemostatic agent already invented in Ukraine. But so far it has neither the patent nor registration certificate, nor production base... Maybe some search and testing are conducted, but it is clear that pharmaceutical development, testing, registration are all quite long processes.

It turns out that REVUL is the only domestic haemostatic product suitable for use in the field and in household conditions which has passed all necessary procedures and has been delivered to pharmacies. Currently, the Ministry of Health of Ukraine and the Ministry of Defence of Ukraine are working together to agree the model of military first aid kit and we have reasons to hope that REVUL will be on the list."

### **Authoritative studies**

#### **Serhiy Shtryhol, Head of the Pharmacology Department of the National University of Pharmacy, MD, professor:**

"The idea that was used to create REVUL is extremely deep despite of its external simplicity, and this deserves complete approval. And the efficacy of the product is shown by preclinical studies conducted in the Central Research Laboratory of the National University of Pharmacy in Kharkiv. We tested REVUL comparing it with Celox. In brief, our findings are as follows: REVUL is not inferior to its imported analogue by specific haemostatic efficacy, and at the same time is safer as it has no anaphylactogenic properties inherent in Celox. The studies were conducted on bleeding models having various localizations, including models of severe arterial bleeding. REVUL has proven to be an effective haemostatic, has shown a positive profile of effect on the laboratory parameters characterizing the system of haemostasis.

### **Better and safer**

The existing studies allow to confidently assert that domestic haemostatic agent REVUL by its efficacy is not inferior to the NATO approved samples. Moreover, it has significant advantages over some of them.

REVUL has no adhesion properties, i.e. it does not stick to the damaged tissues. When physician removes the clot formed by REVUL, residues of the the product are easily washed off with warm physiological solution, and subsequently the wound is treated according to medical protocol.

REVUL does not cause thermal reaction in the site of application and does not cause burns as this can happen when using some of the imported analogues.

REVUL minimizes the chances of allergic reactions since human body contains no enzymes that can break down its components.

REVUL costs several times less than the imported haemostatics and this is also a significant advantage of the Yuria-Pharm's novelty.

### **Words of gratitude from medical professionals and volunteers**

#### **Olha Lashko, volunteer, head of the charitable foundation "Oberih Rodu":**

"There is permanent lack of medicines at the front, and during the work of our foundation support mostly came from ordinary people. But now, due to general deterioration of the economic situation, people are less and less able to make financial contribution. Against the background of such a difficult situation, the fact that Yuria-Pharm was the only domestic pharmaceutical company who responded to our request, is a real gift! We received several boxes of medicines, including REVUL. We delivered this haemostatic product to medical professionals of the 93rd airmobile brigade, to one of the hottest spots, the village of Pisky near Donetsk. Now we are waiting for feedback from medical professionals.

Soldiers spend medicines very sparingly, in first turn they use medicines with approaching expiration date. So a long period of time during which REVUL can be used is another advantage of the product. Of course, it would be good if there was no need for such product... But the truce is very illusory, means of emergency aid remain very relevant, so medical professionals and soldiers express all possible words of gratitude to Yuria-Pharm!"

### **Facts worth knowing:**

- REVUL is intended to stop external arterial and venous bleeding of varying intensity.
- REVUL can be used in clinical, field and household setting.
- In peacetime, it would be good to have REVUL in the first aid kits of motorists and extreme sport enthusiasts.