



Examination of hemostatic agents used in surgery



Bilgen Arikan¹, Meryem Yavuz van Giersbergen²

¹Usak University, School of Health, Department of Nursing, Usak, Turkey

²Ege University, Nursing Faculty, Department of Surgical Nursing, Izmir, Turkey

Background:

Hemostasis means prevention of blood loss. Uncontrollable or excessive bleeding can threaten life by affecting patients' physiological function adversely. Hemostasis can be provided through mechanical, thermal and chemical methods (Karayurt, 2015; Özşaker, 2016).

Objective:

The aim of this study is to examine the chemical hemostatic agents used in providing hemostasis and their properties.

Methods:

Hemostatic agents used in ensuring the control of bleeding through chemical methods were examined in medical supply catalog reached between May 2018 and July 2018.

Results:

A total of 22 catalog were reached within the scope of the study. Topical hemostatic products are classified as passive agents, active agents, flowables and sealants (Table 1). Passive topical hemostatic agents include collagen, cellulose, gelatin and polysaccharide spheres. Active agents include thrombin and products combined with thrombin and a passive agent. The other two groups include fibrin sealants, polyethylene glycol (PEG) polymers and flowables and sealants containing albumin, glutaraldehyde and cyanoacrylate.

The passive topical collagen-based products are microfibrillar collagen hemostat, absorbable collagen hemostat sponge and felt, oxidized regenerated cellulose, absorbable gelatin sponge and felt, polysaccharide hemospheres (absorbable chitosan hemostat). Thrombin is an active hemostatic agent. Flowables and sealants are fibrin gels (glue, sealant, matrix), orthopaedic synthetic bone graft (matrix, granule, putty) and bone wax. These products are applied locally to the surface of the organs and tissues in case of bleeding due to broken capillaries or vein damage. Ingredients, mode and duration of action and application forms are different from each other. Appropriate products are preferred according to the type of surgical initiative and bleeding.

Table 1. Topical hemostatic agents

Passive agents

- Collagen-based products
- Cellulose
- Gelatin
- Polysaccharide spheres

Active agents

- Thrombin products

Flowables

Sealants

- Fibrin sealants
- Polyethylene glycol (PEG) polymers
- Albumin and glutaraldehyde
- Cyanoacrylate

Conclusion:

In recent years, the number of hemostatic agents has increased substantially. It is essential for operating room nurses to have knowledge of hemostatic agents, effects, properties, usage and limitations..

Keywords:

Stopping bleeding, hemostatic agents, surgery, operating room nursing

Resources:

1. Karayurt, Ö. (2015). Kanama Kontrolü. Ameliyathane Hemşireliği. Editör: Meryem Yavuz van Giersbergen, Şenay Kaymakçı. İzmir: Meta Basım Matbaacılık.
2. Özşaker, E. (2016). Hemostazın Sağlanması. *Türkiye Klinikleri Surgical Nursing-Special Topics*, 2(2), 17-23.
3. AORN. (2014). Management of Surgical Hemostasis An Independent Study Guide.