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Case Report

THE ROLE OF ETHAMSYLATE TO REDUCE MAXILLO-FACIAL HAEMORRHAGE

Retnakumar K^{1*}, Packiaraj I², Alaguvel Rajan M³, Magleen Kingsly J⁴

¹MDS, Reader, Department of OMFS, Rajas Dental College & Hospital, Thirunelveli, India

²MDS, Professor, Department of OMFS, Rajas Dental College & Hospital, Thirunelveli, India

³MDS, Senior Lecturer, Department of OMFS, Rajas Dental College Hospital, Thirunelveli, India

⁴PG Student, Department of OMFS, Rajas Dental College & Hospital, Thirunelveli, India

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*Corresponding Author: **Retnakumar K**

MDS, Reader, Department of OMFS, Rajas Dental College & Hospital, Thirunelveli, Mobile no: 9443283582

ABSTRACT

Maxillofacial hemorrhage is very common and the management is challenging to the surgeons. Under normal conditions, hemostasis occurs by two independent processes, the coagulation cascade and the platelet activation pathway. In this, we have discussed about the role of ethamsylate in treating maxillofacial hemorrhage as it has angioprotective and proaggregant action and stimulates thrombopoiesis. It also initiates platelet aggregation and adhesion which controls and arrest the hemorrhage.

Keywords: Ethamsylate, Hemostatic Effect, Hyaluronic acid, Intraventricular Haemorrhage, Thrombopoiesis.

INTRODUCTION

Any injury to the maxillofacial region causes severe bleeding due to profuse blood supply to the head and neck. It increases the morbidity of the patient. So we have to limit the hemorrhage by using thermal, physical and chemical methods. Among them we use ethamsylate as an ideal one which has more hemostatic effect. The other name of the ethamsylate is dicynene and dicynone. It is a derivative of benzene sulfonate.

MECHANISM OF ACTION

Ethamsylate has been used as a hemostatic agent for more than 20 years, though its mode of action remains unknown, it also promotes angioprotective and proaggregant action. It stimulates thrombopoiesis and their release from bone marrow. Its hemostatic action is due to activation of thromboplastin formation on damaged sites of small blood vessels and decrease of prostacyclin 12 synthesis. This appears to relate increased platelet aggregation mediated by a thromboxane A₂ or prostaglandin F₂ and dependent mechanism. It also initiates platelet aggregation and adhesion which controls and arrest the hemorrhage.

STUDY DESIGN

Eighteen healthy adults (age range 19-40) were studied who all were non smokers who took no regular medication, except for females who were on the contraceptive pill. None had a history of gastrointestinal or other disease, dyspepsia, easy bruising, bleeding or aspirin intolerance. All had normal bio-

chemical and hematological values including the platelet count, prothrombin time and activated partial thromboplastin time.

1. We investigated the effect of the hemostatic agent ethamsylate on various types of bleeding.
2. Eighteen traumatized subjects were studied at the end of 48h periods of treatment with ethamsylate 500mg.
3. Traumatized subjects are divided into three groups depending upon the site of hemorrhage.
 - a. Nasal bleeding (various cases)
 - b. Maxilla facial injuries bleeding.
4. Post extraction bleeding.
5. At the end of each treatment period, limitation of bleeding was quantified.
6. We conclude that ethamsylate satisfactorily reduces all type of bleeding in healthy humans.

DISCUSSION

Ethamsylate has shown to reduce bleeding time and blood loss from wounds. Because it reduces capillary bleeding through its action on hyaluronic acid and shown a reduction in intraventricular hemorrhage. It also has an effect on micro circulation, encouraging platelet aggregation and vasoconstriction and therefore hemostasis. It also inhibits the effects of prostaglandin mediated vasodilation and increased capillary permeability there by reducing oedema secondary to capillary leakage.

It produces reperfusion hemorrhage in ischemic areas of brain, preventing secondary damage. By inhibiting the effect of prostaglandins, ethamsylate may exert an effect by closing the patent ducts there by increasing cerebral blood flow. Prostacyclin is a potent vasodilator and may be implicated in reperfusion, it is also a disaggregator of platelets whereas prostaglandins themselves may have a role in regulating cerebral blood flow. Ethamsylate appears to have no effect on cerebral blood flow. It was also thought to stabilize capillaries, reinforcing capillary membranes by polymerizing the hyaluronic acid.

CONCLUSION

We conclude, out of all the local hemostatic agents, ethamsylate is one of the best agents to control local bleeding (capillaries, veins, intramedullary) so it is the main first choice in life threatening hemorrhage.

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Figure 1: Immediately after trauma



Figure 2: Ethamsylate used in Oronasal Bleeding

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