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The Disorders of Balance in Contents between Eicosanoids in Severe Hemorrhagic Shock (SHS) as Initiating Factor in Development of Irreversibility of Process

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Objective: Recognizing the important role of eicosanoids in regulatory functions of physiological systems of organisms.
Methods: The progression of severe hemorrhagic shock (SHS) in changes of prostaglandins (PGs) I_2, F_2a, and thromboxane (TX) A_2 content was studied in the vena cava caudalis of 10 dogs. The SHS was caused by momentary jet hemorrhage from a femoral artery (blood loss volume was 28.2 ±2.7 ml/kg). The mean duration of the animals' lives after the hemorrhage was 298.6±65.9 minutes (min).
Results: Instantly, after the hemorrhage, the contents of PG-I_2, PG-F_2, and TX-A_2 increased by 30% ($p > .05$), 2.6% ($p > .5$), and 96% ($p > .001$), respectively. After 165.7 ±32.0 min of the hemorrhage, the concentrations of PG-I_2, PG-F_2 and TX-A_2 exceeded the initial levels by 87.3%, 73.5% and 129.6% ($p < .001$) respectively. However, after 278.5 ±50.8 min of the hemorrhage, the content of PGI_2 exceeded the initial levels only by 87.4% ($p < .001$), and then the concentrations of PG-F_2 and TX-A_2 were higher by 95.2% and 153.7% ($p < .001$) respectively.
Conclusions: TX-A_2 and PG-F_2 increases at the first stages of shock progression is one of the mechanisms of protective reaction directed to stop bleeding. However, the growing content of these eicosanoids not only opposed the cytoprotective effects of PG-I_2 action, but promotes severe disorders of coronary circulation. Besides, TX-A_2 and PG-F_2 potentiate the effects of platelet activating factor and leukotrienes, and initiate the processes of lipid peroxidation.

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Autologous Transfusion

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The authors present a simplification of an auto-hemotransfusion technique, used preferentially in patients presenting to chronic intensive care (CIC) with trauma to hemothorax.

During the period from January 1988 through June 1992, 42 patients have been treated with the technique. Five of them are deceased, none of the deaths being related directly to the treatment. Since it uses standard equipment, the materials employed can be found easily in any emergency ward. The method can be used for patients with hemoperitoneum using an aspiration line. The use of auto-hemotransfusion can be applied universally and largely has been used in trauma units, during prehospital assistance, in emergency wards, and during surgeries. Its main advantages are quickness, disposability, and low cost.

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Study of Abdominal Trauma Patients: Focusing on Patients with Liver or Spleen Injuries

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Purpose: Although abdominal traumas, particularly parenchymal injuries, have been diagnosed with reasonable accuracy through computed tomography (CT) and ultra-sonography, still it is difficult to determine whether or not laparotomy should be performed. Thus, the courses of liver and spleen injuries treated with conservative methods, mainly based on CT findings, were studied.
Methods: A total of 20 patients admitted to our hospital with injuries to the liver or spleen between April 1986 and March 1991 were used as subjects.
Results: Of 11 patients suffering liver injuries treated with conservative therapy, four and seven respectively had marginal and central bleeding lesions. Marginal fluid retention disappeared within 14.7 days on average. As for central hemorrhage, regionally bleeding lesions with a clear border and diffusely bleeding lesions were observed in two and five patients respectively. As for the rate of hematoma diminution, reduction by 1 cm required 6.8 days for diffuse hemorrhage and 10.5 days for regional hemorrhage, although the rate of hematoma diminution was not consistent throughout the entire course. For example, a hematoma decreased in maximum diameter from 14 to 9 cm during the first seven days, but took 40 days to diminish its diameter from 9 to 5 cm. When patients with spleen injuries were examined on CT, excluding one undergoing spleenectomy due to a central tear detected by CT, it was revealed that the duration needed for hematoma disappearance greatly varied, from 30 days in the shortest case to 120 days in the longest