TTL TIP 3

The importance of calcium in major haemorrhage

Hypocalcaemia is common in major trauma patients with acute traumatic coagulopathy. When we give blood it contains citrate which further reduces blood calcium. In addition packed red cells contain very high levels of K+, so hyperkalaemia is also common.

The combination of hypocalcaemia and hyperkalaemia is deadly and must be prevented.

1. Always check the ionised calcium on the first gas. A level below 1.0 is considered severe hypocalcaemia
2. Keep checking the Calcium as resuscitation continues
3. In hemorrhagic shock consider giving Calcium Gluconate 10ml 10% during or immediately after transfusion of the first unit of blood product and with ongoing resuscitation after every 4 units of blood products.
4. Take regular VBGs and closely monitor and correct potassium and calcium levels.
5. If you don't have access to a blood gas then we recommend giving CaCl 10ml with every second two units (this is controversial though as there is no real consensus on this).
6. Read more here
    1. https://www.stemlynsblog.org/hypocalcaemia-trauma-and-major-transfusion-st-emlyns/
    2. https://www.stemlynsblog.org/more-on-calcium-and-blood-products-in-trauma-st-emlyns/