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Short Communication

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A Brief overview of Hypocalcemia in Trauma Victims

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Introduction

Pathways reliant on calcium, including as platelet function, intrinsic and extrinsic hemostasis, and cardiac contractility, are altered during hemorrhagic shock and subsequent resuscitation. The goal of this systematic review was to look at the current literature for any links between pretransfusion, admission ionised hypocalcemia, and composite outcomes in adult trauma patients, such as mortality, blood transfusion needs, and coagulopathy.

Methods

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses checklist was used to report this review. From the launch of the database until May 3, 2020, we searched Ovid MEDLINE and grey literature. Case studies and reports were not included in the study [1]. Reference lists of assessed studies were also examined for articles that might not have been found in the aforementioned databases. The Newcastle-Ottawa Scale was used to rate the quality of the research.

Search Strategy

This study looked at both English and non-English literature. The following is how subject headers (/) were used: (Hypocalcemia/bl, co, mo [Blood, Complications, Mortality] or Calcium/bl, df [Blood, Deficiency]) traumatic/or Critical Illness/or "wounds and injuries"/or abdominal injuries/or amputation, traumatic/or back injuries/or countercoups injury/or crush injuries/or foreign bodies/or fractures, bone/or multiple trauma/or neck injuries/or shock, traumatic/or spinal cord injuries/or thoracic injuries/or war-related injuries/or wounds, nonpenetrating/or wounds, traumatic/or spinal cord injuries/or thoracic.

Eligibility Criteria

All trauma patients aged 18 and up who had an admission ionised calcium measurement before blood transfusion were included, as were all study categories except case reports and series and animal studies [2].

Exclusion Criteria

Because of the well-known phenomena of transfusion-induced hypocalcemia, we excluded trials in which patients had received blood products prior to the initial ionised calcium test. To ensure methodological consistency, studies where ionised calcium concentrations were not obtained on arrival before blood transfusion were also eliminated.

Information Sources

We looked for papers in Ovid MEDLINE between the beginning of the database and May 3, 2020. We also looked through the reference lists of a number of researches for relevant papers that might not have been found otherwise [3].

Results

Through database searches and other sources, a total of 585 abstracts were reviewed. Three out of six full-text studies were found to be ineligible. In the studies covered in this analysis, admission ionised hypocalcemia was found in up to 56.2 percent of the population. In all three studies, admission ionised hypocalcemia was linked to an increased risk of death, higher blood transfusion requirements in two studies, and coagulopathy in one.

Conclusion

Hypocalcemia is a typical finding in trauma patients who have been shocked. While a link has been found between admission ionised hypocalcemia and mortality, blood transfusion needs, and coagulopathy, more prospective trials are needed to confirm this link.

References

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