Reviewer's report

Title: Lepirudin as an alternative to heparin allergy, during cardiopulmonary bypass

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Reviewer: Friedrich-Christian Riess

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Review für das Journal of Cardiothoracic Surgery

Titel: Lepirudin as an alternative to heparin allergy, during cardiopulmonary bypass
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This case report is about the use of lepirudin in a patient with suspected heparin allergy undergoing cardiopulmonary bypass for ASD closure.

For anticoagulatory monitoring during cardiopulmonary bypass ACT, aPTT as well as INR was used. Postoperatively, the patient had severe bleeding complications with a need for precipitates and blood transfusion.

It is well known and documented in the literature, that ACT, aPTT as well as INR is not suitable for hirudin monitoring during cardiopulmonary bypass. Ecarin clotting time is the most suitable monitoring test for hirudin dosage during cardiopulmonary bypass. Thus, for me it is not clear, why in an elective ASD closure with suspected heparin allergy. An elective ASD closure was carried out about having ecarin clotting time available in the OI setting.

Moreover, the most cases of heparin so called heparin allergy, the allergic reaction is induced by preservating substances. There are unfractionated heparins available on the market without this substances. Using this special drugs the most cases no allergic reactions would occure.

Thus, I recommend to reject this article because it is an case report on how not to do it.

1. unsufficient preoperative diagnostic (no skin testing of unfractionated heparins free of preservating substances).
2. no ecarin clotting time monitoring system available.
3. Due to unsuitable anticoagulation monitoring system propably overdosage of hirudin with subsequent severe bleeding complication.
It is well documented in many case reports, that lepirudin together with ecarin clotting time monitoring system is a secure technique with a low bleeding risk. I would recommend the author in the future to treat patients only with hirudin having ecarin clotting time available.

**Level of interest:** Reject as not of sufficient priority to merit publishing in this journal

**Quality of written English:** Acceptable

**Declaration of competing interests:**

None