

# Lower post-operative aspartate aminotransferase in patients who received anticoagulation following digital replantation with LMWHs



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## Purpose

Low molecular weight heparin (LMWH) is frequently used for anticoagulation following digital replantation because of their simple use which is injected twice per day subcutaneously. However, few studies compared the success rate or complication with unfractionated heparin (UFH). The aim of this study is to compare the success rate and complication of LMWH group with those of UFH group.

## Methods

Six patients (mean age: 53.58 years old, all males) who received a replantation surgery for digital amputation during past 10 years by one surgeon were included. Two of them received LMWHs and they were compared with rest of patients by thorough case reviews. The results of post-operative serum aspartate aminotransferase (AST) and Alanine transaminase (ALT) in all patients are discussed, to compare possibility of liver dysfunction after receiving LMWHs or UFHs.

## Results

All patients succeeded to recover finger circulation after replantation (figure 1 – 3) and there was no measurable difference in function between them. Among LMWH group, no patients experienced moderate or severe increased AST status, whereas 3 out of 4 patients who received UFHs showed higher than 200 IU/L (ranged from 217 to 220 IU/L). One of UFH received patient showed increased AST as 14.67 times higher than pre-operative status. No severe elevation in ALT level are observed. (Table 1)



Fig 1. Preoperative(above) / Postoperative(below) clinical photo of LMWH group patient

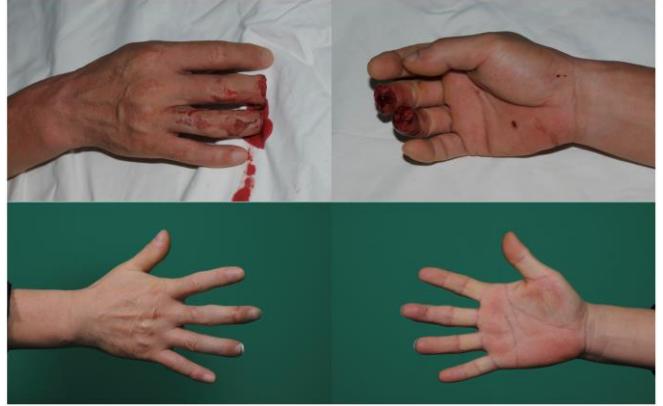


Fig 2. Preoperative(above) / Postoperative(below) clinical photo of UFH group patient



Fig 3. Preoperative(above) / Postoperative(below) clinical photo of UFH group patient

| Group | PreOp AST | PostOp AST | PreOp ALT | PostOp ALT |
|-------|-----------|------------|-----------|------------|
| LMWH  | 26        | 146        | 24        | 151        |
| LMWH  | 23        | 93         | 23        | 100        |
| UFH   | 15        | 220        | 14        | 109        |
| UFH   | 30        | 55         | 21        | 69         |
| UFH   | 28        | 217        | 13        | 160        |
| UFH   | 48        | 241        | 28        | 140        |

Fig 4. Comparison of preoperative AST/ALT and postoperative AST/ALT of each patient.

## Conclusion

Patients who received LMWH for anticoagulation following digital replantation showed no difference in success rate but lower increase in liver enzymes. Further randomized studies are needed to reveal the advantages of using LMWHs instead of UFHs.

