# Continuation of Antithrombotic Use in Hand Surgery: An Analysis of Risks and Benefits

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## Background

Hand Surgery + Continued Antithrombotic Usage ***caused an*** increase of bleeding complications risk

***Thus the question,*** is the increased risk of bleeding complications preferable to the increased risk of thromboembolic episodes?

**Why hand surgery?**
No clear guidelines or conclusions, significantly less research on hand surgery

## Discussion & Conclusion

On the majority of cases, the risk of thromboembolic increase **outweighs** the risk of bleeding complications.

However, decisions still need to be done on a case-by-case basis by an expert physician.

Due to low surgery procedures with WALANT, a reliable conclusion cannot be made.

Ethical problems with discontinuing antithrombotic due to the increase in thromboembolic risk, this cause a low number procedure discontinue antithrombotic.

## Limitations

**Lack of study on:**
- WALANT technique usage on hand surgery
- Discontinuation of antithrombotic
- Newer oral anticoagulants
- The effect of bone involvement in hand surgery with the rate of bleeding complications

## Recommendation

- Further look into the involvement of WALANT, newer oral anticoagulant, and type of surgery with the rate and the severity of bleeding complication in hand surgery.
- Avoid the usage of case series and case studies

## *References*

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## Methods (PRISMA System)

**Risk of Bias** was done using ROBINS-I assessment tool for non-randomized studies.[11]

**Quality of Evidence** was done using Grading of Recommendations Assessment, Development and Evaluation (GRADE).[12]

**The severity of bleeding complications** was measured using Clavien-Dindo complication grade.[10]

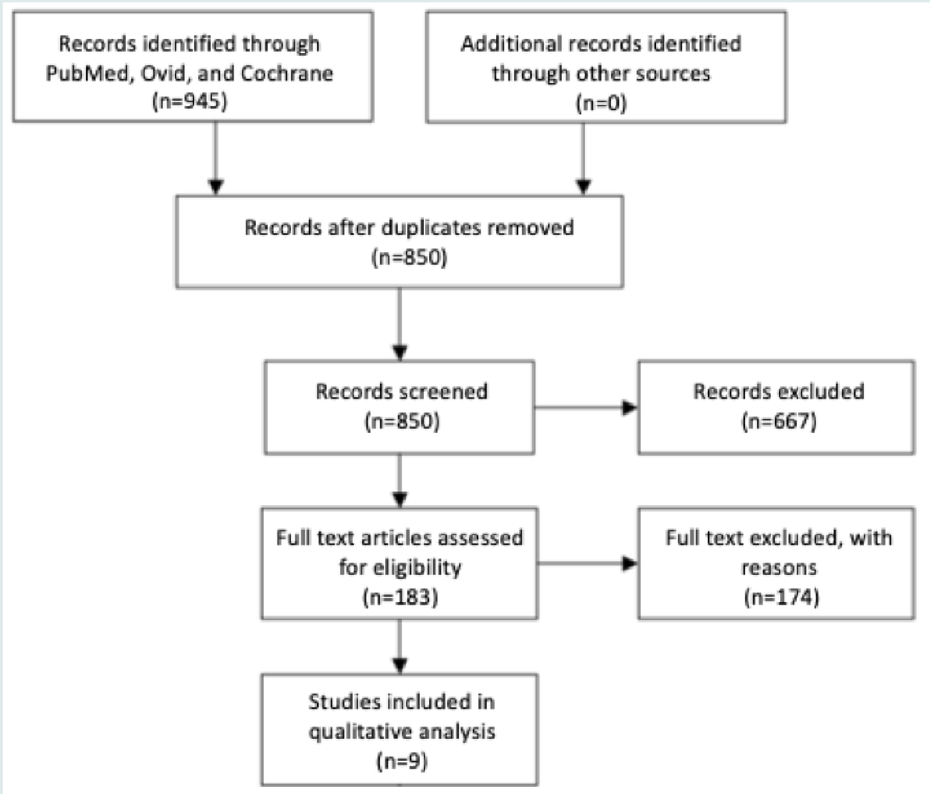


**Figure 1**: PRISMA Diagram

**Table 1:** Comparison of bleeding complications reported in the nine studies of patients who continued and discontinued antithrombotic during hand surgery.[1,2,3,4,5,6,7,8,9]

| Study Number | Cohort | Total number of procedures | Total bleeding complications | Bleeding complications not requiring reoperation | | Bleeding complications requiring reoperation | |
|---|---|---|---|---|---|---|---|
| | | | | No of complications (%) | Type of complication | No of complications (%) | Type of complication |
| 1 | Continue AT | 52 | 1 | 1 (1.92%) | Hematoma | - | - |
| 2 | Continue AT | 12 | 1 | 1 (8.33%) | Hematoma | - | - |
| | Discontinue AT | 9 | 0 | - | - | - | - |
| 3 | Continue AT | 8 | 0 | - | - | - | - |
| | Discontinue AT | 7 | 0 | - | - | - | - |
| 4 | Continue AT | 50 | 10 | 10 (20%) | Hematoma | - | - |
| | Discontinue AT | 50 | 9 | 9 (18%) | Hematoma | - | - |
| 5 | Continue AT | 6 | 0 | - | - | - | - |
| | Discontinue AT | 25 | 0 | - | - | - | - |
| 6 | Continue AT | 47 | 15 | 14 (29.8%) | Hematoma | 1 (2.1%) | Hematoma and acute carpal tunnel syndrome |
| 7 | Continue AT | 92 | 1 | 0 (0%) | Hematoma | 1 (1.1%) | Hematoma and acute carpal tunnel syndrome |
| 8 | Continue AT | 90 | 14 | 14 (15.6%) | Hematoma | - | - |
| 9 | Continue AT | 48 | 0 | - | - | - | - |
| Total | Continue AT | 405 | 42 (10.37%) | 40 (9.88%) | Hematoma | 2 (0.49%) | Hematoma and acute carpal tunnel syndrome |
| | Discontinue AT | 91 | 9 (9.89%) | 9 (9.89%) | Hematoma | 0 (0%) | - |

AT: Antithrombotic

**Table 2:** Comparison between WALANT versus tourniquet technique on the rate and severity of the bleeding complications.[1,2,3,4,5,6,8]

| Study Number | Surgery Procedures | No of procedures | Clavien-Dindo Complication Grade (%) | | | | |
|---|---|---|---|---|---|---|---|
| | | | I | II | III | IV | V |
| 2 | Tourniquet | 12 | 1 (8.33%) | - | - | - | - |
| 4 | Tourniquet | 50 | 10 (20%) | - | - | - | - |
| 5 | WALANT | 6 | - | - | - | - | - |
| 6 | Tourniquet | 47 | 14 (29.8%) | - | 1 (2.13) | - | - |
| 7 | Tourniquet | 92 | - | - | 1 (1.1%) | - | - |
| 8 | Tourniquet | 90 | 14 (15.6%) | - | - | - | - |
| 9 | Tourniquet | 48 | - | - | - | - | - |
| Total | Tourniquet | 339 | 39 (11.50%) | - | 2 (0.59%) | - | - |
| | WALANT | 6 | - | - | - | - | - |

## Results

- **Highest** incidence of bleeding complications occurred in study 6 (29.8%).

- **Lowest** incidence of bleeding complications occurred in study 7 (0%).

- Only 2 severe bleeding complications were observed from a total of 496 procedures.

-39 bleeding complications (11.50%) occurred in surgery procedures with a tourniquet.

- No bleeding complications occurred in surgery procedures with the WALANT method.