

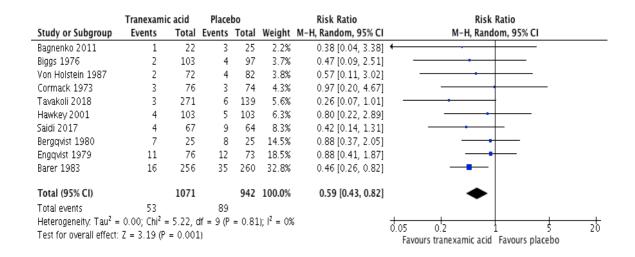
# **Central Lancashire Online Knowledge (CLoK)**

| Title    | Systematic review with meta-analysis: the efficacy of tranexamic acid in   |
|----------|--|
|          | upper gastrointestinal bleeding  |
| Type     | Article  |
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| DOI      | https://doi.org/10.1111/apt.15761  |
| Date     | 2020   |
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| Creators | Twum-Barimah, Erica, Abdelgadir, Ibtihal, Gordon, Morris and Akobeng,<br>Anthony K.  |

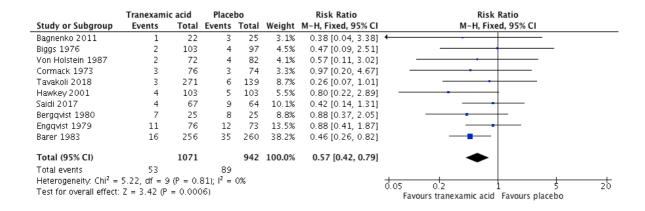
It is advisable to refer to the publisher's version if you intend to cite from the work. https://doi.org/10.1111/apt.15761

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#### 1. All cause mortality random



#### 2. All cause mortality fixed

# 3. Re-bleeding random

|                                   | Tranexamic acid Placebo    |        |           |        |                         | Risk Ratio          | Risk Ratio  |
|-----------------------------------|----------------------------|--------|-----------|--------|-------------------------|---------------------|---|
| Study or Subgroup                 | Events                     | Total  | Events    | Total  | Weight                  | M-H, Random, 95% CI | M-H, Random, 95% CI                                       |
| Bagnenko 2011                     | 2                          | 22     | 5         | 25     | 2.6%                    | 0.45 [0.10, 2.11]   | <del></del>   |
| Saidi 2017                        | 4                          | 67     | 12        | 64     | 5.0%                    | 0.32 [0.11, 0.94]   |   |
| Hawkey 2001                       | 9                          | 103    | 10        | 103    | 7.5%                    | 0.90 [0.38, 2.12]   |   |
| Von Holstein 1987                 | 10                         | 69     | 19        | 72     | 10.8%                   | 0.55 [0.28, 1.10]   |   |
| Tavakoli 2018                     | 20                         | 271    | 13        | 139    | 11.4%                   | 0.79 [0.40, 1.54]   |   |
| Cormack 1973                      | 15                         | 76     | 20        | 74     | 13.9%                   | 0.73 [0.41, 1.31]   | <del></del>   |
| Engqvist 1979                     | 23                         | 76     | 29        | 73     | 20.6%                   | 0.76 [0.49, 1.19]   |   |
| Barer 1983                        | 58                         | 256    | 51        | 260    | 28.2%                   | 1.16 [0.83, 1.61]   | +-  |
| Total (95% CI)                    |                            | 940    |           | 810    | 100.0%                  | 0.79 [0.61, 1.02]   | •   |
| Total events                      | 141                        |        | 159       |        |                         |                     |   |
| Heterogeneity: Tau <sup>2</sup> = | = 0.03; Chi <sup>2</sup> = | 9.14,  | df = 7 (P | = 0.24 | l); l <sup>2</sup> = 23 | %                   | 0.05 0.2 1 5 20   |
| Test for overall effect           | Z = 1.83 (P)               | = 0.07 |           |        |                         |                     | 0.05 0.2 1 5 20  Favours transexamic acid Favours placebo |
|                                   |                            |        |           |        |                         |                     | ravours transexamic acid ravours placedo                  |

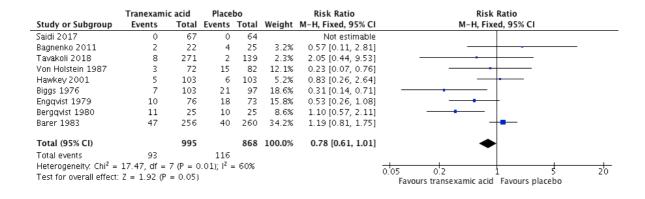
## 4. Re- bleeding fixed

|                                   | Tranexami      | c acid  | Place                 | bo    |        | Risk Ratio         | Risk Ratio   |
|-----------------------------------|----------------|---------|-----------------------|-------|--------|--------------------|--|
| Study or Subgroup                 | Events         | Total   | Events                | Total | Weight | M-H, Fixed, 95% CI | M-H, Fixed, 95% CI                                       |
| Bagnenko 2011                     | 2              | 22      | 5                     | 25    | 2.9%   | 0.45 [0.10, 2.11]  |  |
| Saidi 2017                        | 4              | 67      | 12                    | 64    | 7.5%   | 0.32 [0.11, 0.94]  |  |
| Hawkey 2001                       | 9              | 103     | 10                    | 103   | 6.1%   | 0.90 [0.38, 2.12]  |  |
| Von Holstein 1987                 | 10             | 69      | 19                    | 72    | 11.4%  | 0.55 [0.28, 1.10]  | <del></del>  |
| Tavakoli 2018                     | 20             | 271     | 13                    | 139   | 10.5%  | 0.79 [0.40, 1.54]  |  |
| Cormack 1973                      | 15             | 76      | 20                    | 74    | 12.4%  | 0.73 [0.41, 1.31]  |  |
| Engqvist 1979                     | 23             | 76      | 29                    | 73    | 18.1%  | 0.76 [0.49, 1.19]  | <del></del>  |
| Barer 1983                        | 58             | 256     | 51                    | 260   | 31.0%  | 1.16 [0.83, 1.61]  | +-   |
| Total (95% CI)                    |                | 940     |                       | 810   | 100.0% | 0.82 [0.67, 1.01]  | •  |
| Total events                      | 141            |         | 159                   |       |        |                    |  |
| Heterogeneity: Chi <sup>2</sup> = | 9.14, df = $7$ | P = 0.  | 24); I <sup>2</sup> = | 23%   |        |                    |  |
| Test for overall effect           | Z = 1.86 (P    | = 0.06) |                       |       |        |                    | 0.05 0.2 1 5 20 Favours transexamic acid Favours placebo |
|                                   | ,              |         |                       |       |        |                    | ravours transexamic acid ravours placebo                 |

#### 5. Surgical interventions random

|                                   | Tranexami                  | c acid   | Place               | bo      |                            | Risk Ratio        | Risk Ratio                               |
|-----------------------------------|----------------------------|----------|---------------------|---------|----------------------------|-------------------|--|
| Study or Subgroup                 | Events Total               |          | <b>Events Total</b> |         | Weight M-H, Random, 95% CI |                   | M-H, Random, 95% CI                      |
| Saidi 2017                        | 0                          | 67       | 0                   | 64      |                            | Not estimable     |  |
| Bagnenko 2011                     | 2                          | 22       | 4                   | 25      | 6.5%                       | 0.57 [0.11, 2.81] | <del></del>                              |
| Tavakoli 2018                     | 8                          | 271      | 2                   | 139     | 6.9%                       | 2.05 [0.44, 9.53] | <del></del>                              |
| Von Holstein 1987                 | 3                          | 72       | 15                  | 82      | 9.5%                       | 0.23 [0.07, 0.76] | <del></del>                              |
| Hawkey 2001                       | 5                          | 103      | 6                   | 103     | 10.0%                      | 0.83 [0.26, 2.64] | <del></del>                              |
| Biggs 1976                        | 7                          | 103      | 21                  | 97      | 14.2%                      | 0.31 [0.14, 0.71] |  |
| Engqvist 1979                     | 10                         | 76       | 18                  | 73      | 15.7%                      | 0.53 [0.26, 1.08] |  |
| Bergqvist 1980                    | 11                         | 25       | 10                  | 25      | 16.5%                      | 1.10 [0.57, 2.11] | <del>-</del>                             |
| Barer 1983                        | 47                         | 256      | 40                  | 260     | 20.7%                      | 1.19 [0.81, 1.75] | +  |
| Total (95% CI)                    |                            | 995      |                     | 868     | 100.0%                     | 0.70 [0.43, 1.13] | •  |
| Total events                      | 93                         |          | 116                 |         |                            |                   |  |
| Heterogeneity: Tau <sup>2</sup> = | = 0.25; Chi <sup>2</sup> = | = 17.47, | df = 7 (            | P = 0.0 | $(1);  ^2 = 6$             | 50%               | 0.005 0.1 1 10 200                       |
| Test for overall effect           | Z = 1.47 (P)               | = 0.14)  |                     |         |                            |                   | Favours transexamic acid Favours placebo |

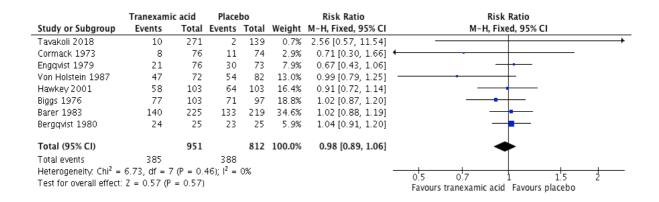
### 6. Surgical interventions fixed



#### 7. Frequency of blood transfusion random

|                                   | Tranexamic acid Placebo    |           |                     |        |                            | Risk Ratio         | Risk Ratio  |
|-----------------------------------|----------------------------|-----------|---------------------|--------|----------------------------|--------------------|---|
| Study or Subgroup                 | Events Total               |           | <b>Events Total</b> |        | Weight M-H, Random, 95% CI |                    | M–H, Random, 95% CI                                     |
| Tavakoli 2018                     | 10                         | 271       | 2                   | 139    | 0.2%                       | 2.56 [0.57, 11.54] |   |
| Cormack 1973                      | 8                          | 76        | 11                  | 74     | 0.8%                       | 0.71 [0.30, 1.66]  | · · · · · · · · · · · · · · · · · · ·                   |
| Engqvist 1979                     | 21                         | 76        | 30                  | 73     | 2.7%                       | 0.67 [0.43, 1.06]  | <del></del>   |
| Von Holstein 1987                 | 47                         | 72        | 54                  | 82     | 10.6%                      | 0.99 [0.79, 1.25]  |   |
| Hawkey 2001                       | 58                         | 103       | 64                  | 103    | 10.8%                      | 0.91 [0.72, 1.14]  |   |
| Biggs 1976                        | 77                         | 103       | 71                  | 97     | 20.7%                      | 1.02 [0.87, 1.20]  | <del>-</del>  |
| Barer 1983                        | 140                        | 225       | 133                 | 219    | 25.8%                      | 1.02 [0.88, 1.19]  | <del></del>   |
| Bergqvist 1980                    | 24                         | 25        | 23                  | 25     | 28.3%                      | 1.04 [0.91, 1.20]  | <del> </del>  |
| Total (95% CI)                    |                            | 951       |                     | 812    | 100.0%                     | 1.00 [0.93, 1.08]  | •   |
| Total events                      | 385                        |           | 388                 |        |                            |                    |   |
| Heterogeneity: Tau <sup>2</sup> = | = 0.00; Chi <sup>2</sup> = | = 6.73, ( | df = 7 (P           | = 0.46 | $3);   ^2 = 0$             | · -                | 0'5 0'7 1 1'5 2   |
| Test for overall effect:          | Z = 0.00 (P)               | = 1.00)   |                     |        |                            |                    | 0.5 0.7 1 1.5 2 Favours tranexamic acid Favours placebo |
|                                   |                            |           |                     |        |                            |                    | ravours tranexamic actur ravours placedo                |

#### 8. Frequency of blood transfusion fixed



## 9. Thromboembolic events random

|                                   | Tranexamic acid Placebo    |              |           |                     | Risk Ratio              | Risk Ratio          |   |
|-----------------------------------|----------------------------|--------------|-----------|---------------------|-------------------------|---------------------|---|
| Study or Subgroup                 | Events                     | Events Total |           | <b>Events Total</b> |                         | M-H, Random, 95% CI | M-H, Random, 95% CI                     |
| Cormack 1973                      | 0                          | 76           | 0         | 74                  |                         | Not estimable       |   |
| Bagnenko 2011                     | 0                          | 22           | 0         | 25                  |                         | Not estimable       |   |
| Saidi 2017                        | 0                          | 67           | 0         | 64                  |                         | Not estimable       |   |
| Von Holstein 1987                 | 1                          | 72           | 0         | 82                  | 18.6%                   | 3.41 [0.14, 82.44]  | -                                       |
| Engqvist 1979                     | 4                          | 76           | 2         | 73                  | 37.9%                   | 1.92 [0.36, 10.17]  | <del>-   • -</del>                      |
| Tavakoli 2018                     | 3                          | 271          | 6         | 139                 | 43.5%                   | 0.26 [0.07, 1.01]   | <del></del>                             |
| Total (95% CI)                    |                            | 584          |           | 457                 | 100.0%                  | 0.89 [0.17, 4.59]   |   |
| Total events                      | 8                          |              | 8         |                     |                         |                     |   |
| Heterogeneity. Tau <sup>2</sup> = | = 1.12; Chi <sup>2</sup> = | = 4.43, (    | df = 2 (P | = 0.11              | .); l <sup>2</sup> = 55 | %                   | 0.001 0.1 1 10 1000                     |
| Test for overall effect           | Z = 0.14 (P)               | = 0.89)      |           |                     |                         |                     | Favours tranexamic acid Favours placebo |

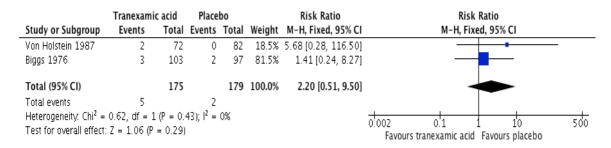
## 10. Thromboembolic event fixed

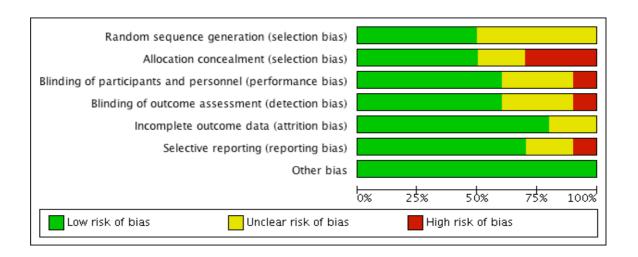
|                          | Tranexami      | c acid  | Place     | bo    |        | Risk Ratio         | Risk Ratio                              |      |
|--------------------------|----------------|---------|-----------|-------|--------|--------------------|---|------|
| Study or Subgroup        | Events         | Total   | Events    | Total | Weight | M-H, Fixed, 95% CI | M-H, Fixed, 95% CI                      |      |
| Cormack 1973             | 0              | 76      | 0         | 74    |        | Not estimable      |   |      |
| Bagnenko 2011            | 0              | 22      | 0         | 25    |        | Not estimable      |   |      |
| Saidi 2017               | 0              | 67      | 0         | 64    |        | Not estimable      |   |      |
| Von Holstein 1987        | 1              | 72      | 0         | 82    | 4.5%   | 3.41 [0.14, 82.44] | -                                       |      |
| Engqvist 1979            | 4              | 76      | 2         | 73    | 19.5%  | 1.92 [0.36, 10.17] |   |      |
| Tavakoli 2018            | 3              | 271     | 6         | 139   | 76.0%  | 0.26 [0.07, 1.01]  | -                                       |      |
| Total (95% CI)           |                | 584     |           | 457   | 100.0% | 0.72 [0.30, 1.73]  | •                                       |      |
| Total events             | 8              |         | 8         |       |        |                    |   |      |
| Heterogeneity. Chi² =    | 4.43, df = $2$ | (P = 0. | 11);  2 = | 55%   |        |                    | 0.001 0.1 1 10                          | 1000 |
| Test for overall effect: | Z = 0.73 (P    | = 0.47) |           |       |        |                    | Favours tranexamic acid Favours placebo | 1000 |

## 11. Thrombophlebitis random

|                                   | Tranexamic acid |         | Placebo |        |                        | Risk Ratio          | Risk Ratio                              |
|-----------------------------------|-----------------|---------|---------|--------|------------------------|---------------------|---|
| Study or Subgroup                 | Events          | Total   | Events  | Total  | Weight                 | M-H, Random, 95% CI | M-H, Random, 95% CI                     |
| Von Holstein 1987                 | 2               | 72      | 0       | 82     | 25.5%                  | 5.68 [0.28, 116.50] |   |
| Biggs 1976                        | 3               | 103     | 2       | 97     | 74.5%                  | 1.41 [0.24, 8.27]   | <del>-</del>                            |
| Total (95% CI)                    |                 | 175     |         | 179    | 100.0%                 | 2.02 [0.44, 9.26]   | -                                       |
| Total events                      | 5               |         | 2       |        |                        |                     |   |
| Heterogeneity: Tau <sup>2</sup> = |                 |         |         | = 0.43 | ); l <sup>2</sup> = 0% | 5                   | 0.002 0.1 1 10 500                      |
| Test for overall effect:          | Z = 0.90 (P)    | = 0.37) |         |        |                        |                     | Favours tranexamic acid Favours placebo |

## 12. Thrombophlebitis fixed





Risk of bias graph: review authors' judgements about each risk of bias item presented as percentages across all included studies.

|                   | Random sequence generation (selection bias) | Allocation concealment (selection bias) | Blinding of participants and personnel (performance bias) | Blinding of outcome assessment (detection bias) | Incomplete outcome data (attrition bias) | Selective reporting (reporting bias) | Other bias |
|-------------------|---|---|---|---|--|--------------------------------------|------------|
| Bagnenko 2011     | ?   | ?                                       | ?   | ?   | ?  | •                                    | •          |
| Barer 1983        | •   | •                                       | •   | •   | •  | •                                    | •          |
| Bergqvist 1980    | ?   | •                                       | ?   | ?   | ?  | ?                                    | •          |
| Biggs 1976        | ?   | •                                       | •   | •   | •  | •                                    | •          |
| Cormack 1973      | ?   | •                                       | ?   | ?   | •  | •                                    | •          |
| Engqvist 1979     | •   | •                                       | •   | •   | •  | •                                    | •          |
| Hawkey 2001       | •   | •                                       | •   | •   | •  | ?                                    | •          |
| Saidi 2017        | •   | •                                       | •   | •   | •  | •                                    | •          |
| Tavakoli 2018     | •   | •                                       | •   | •   | •  | •                                    | •          |
| Von Holstein 1987 | ?   | ?                                       | •   | •   | •  |                                      |            |

Risk of bias summary: review authors' judgements about each risk of bias item for each included study.