

COLLEGE OF

PHARMACY

UNIVERSITY OF UTAH

Background

- Aspirin (ASA) may be beneficial due to its antiplatelet effects, but no longer recommended for primary prevention.
- ASA is associated with an increased risk of gastrointestinal bleeding (GIB), particularly in older adults.
- Published systematic reviews are outdated as new evidence becomes available.

Objective

To conduct a systematic review and meta-analysis of risk for

GIB after exposure to low-dose ASA.

Methods

- A literature search was conducted for studies evaluating the risk of GIB after aspirin exposure published through September 2023.
- To identify articles of interest, previous meta-analyses were examined eligible studies. PubMed, Scopus, Web of Science, and Embase were searched to identify additional studies from 2018 to 2023, as the most recent meta-analyses contained articles through September 2018.
- Inclusion criteria: randomized controlled trials with an aspirin dose of less than 325 mg compared to placebo, incidence of GIB reported.
- GIB was defined as any upper or lower gastrointestinal tract bleeding. A random effects model was employed to pool studies and calculate an effect size. Heterogeneity was assessed using I².

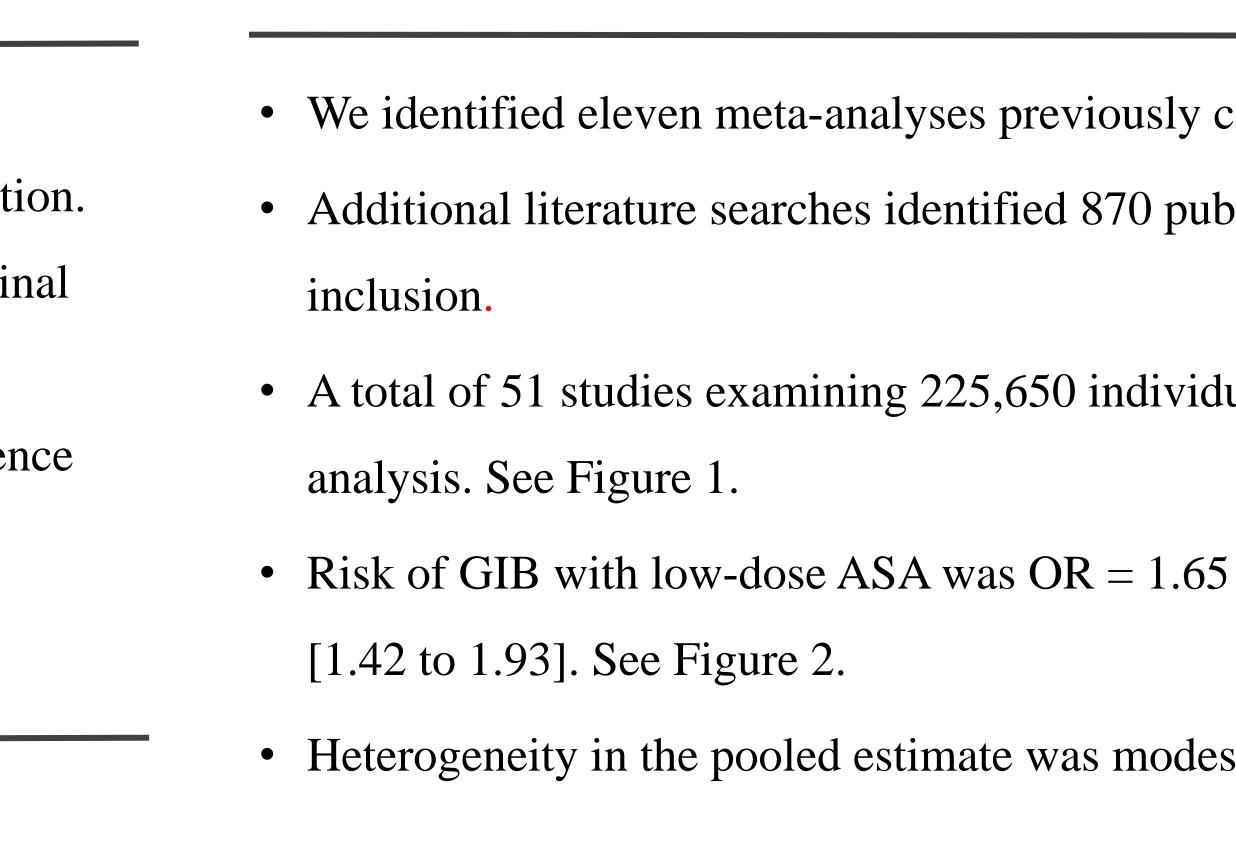
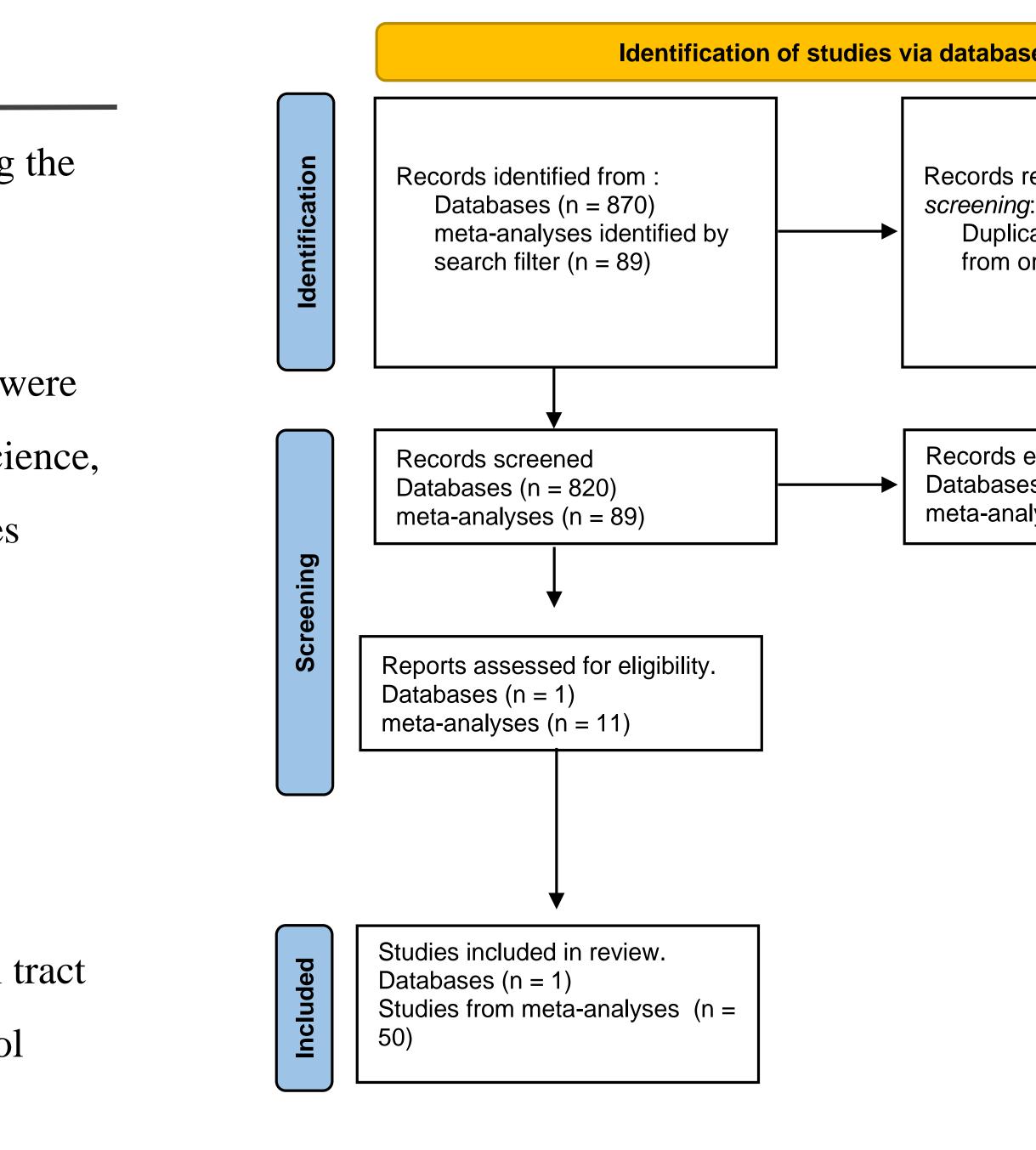


Figure 1. PRISMA follow diagram



Conclusion

- There is a significant risk of GIB associated with aspirin
- These findings emphasize the need to assess the risk-benefit ratio of aspirin therapy.

Risk of Gastrointestinal Bleeding for Aspirin Users: A Comprehensive Review and Meta-analysis of RCTs Abdelrahman G.Tawfik, MS, Ainhoa Gomez-Lumbreras, MD, PhD, Daniel C. Malone, PhD Department of Pharmacotherapy, Skaggs College of Pharmacy, University of Utah, Salt Lake City, UT, USA

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|---|---|--------------------------|------------------------------------|--------------------------|------------------------------------|--------------------------------------|---|
| Results | | | | | | | |
| conducted on the topic. | Figure 2.] | Forest | plot | | | | |
| ublications that were assessed for | Study | Experi Events | mental Total | | Control Total | Weight | Odds Ratio MH, Random, 95% CI |
| duals were included in the | laffort | 8 | 109 | 0 | 120 | 0.3% | 20.18 [1.15; 353.95] |
| | Meschengieser | 3 | 258 | 6 | 245 | 1.0% | 0.47 [0.12; 1.89] |
| | Côté R | 1 | 188 | 1 | 184 | 0.3% | 0.98 [0.06; 15.76] |
| | UKTIA_Final | 25 | 806 | 9 | 814 | 2.5% | 2.86 [1.33; 6.17] |
| | Silagy | 6 | 200 | 0 | 200 | 0.3% | 13.40 [0.75; 239.49] |
| | Ogawa | 6 | 1262 | 4 | 1277 | 1.2% | 1.52 [0.43; 5.40] |
| 55 (95% Confidence interval = | PHS | 440 | 11037 | 422 | 11034 | 6.0% | 1.04 [0.91; 1.20] |
| | Baron | 6 | 749 | 3 | 372 | 1.0% | 0.99 [0.25; 3.99] |
| | ESCLAP | 9 | 253 | 3 | 265 | 1.1% | 3.22 [0.86; 12.04] |
| | GESIC | 8 | 373 | 5 | 371 | 1.5% | 1.60 [0.52; 4.95] |
| est, with an $I^2 = 56\%$. | TPT1 | 22 | 1277 | 10 | 1268 | 2.6% | 2.21 [1.04; 4.68] |
| | TPT2 | 6 | 1268 | 2 | 1272 | 0.8% | 3.02 [0.61; 14.99] |
| | SPAF | 5 | 521 | 6 | 523 | 1.3% | 0.83 [0.25; 2.75] |
| | AD2000 | 4 | 156 | 1 | 154 | 0.5% | 4.03 [0.44; 36.44] |
| | HOT | 107 | 9429 | 55 | 9409 | 4.9% | 1.95 [1.41; 2.71] |
| | PEP | 210 | 6679 | 148 | 6677 | 5.6% | 1.43 [1.16; 1.77] |
| | PEP2 | 6 | 2047 | 2 | 2041 | 0.8% | 3.00 [0.60; 14.87] |
| | Turpie | 8 | 186 | 4 | 184 | 1.3% | 2.02 [0.60; 6.84] |
| | SALT | 11 | 676 | 4 | 684 | 1.4% | 2.81 [0.89; 8.88] |
| | Lewis | 4 | 625 | 3 | 641 | 0.9% | 1.37 [0.31; 6.15] |
| ses | PPP | 17 | 2226 | 5 | 2269 | 1.8% | 3.48 [1.28; 9.46] |
| | Gavaghan | 3 | 128 | 1 | 111 | 0.4% | 2.64 [0.27; 25.75] |
| | AFASAK | 1 | 336 | 0 | 336 | 0.2% | 3.01 [0.12; 74.13] |
| | SAPAT | 11 | 1009 | 6 | 1026 | 1.8% | 1.87 [0.69; 5.09] |
| | EFAT | 2 | 404 | 1 | 378 | 0.4% | 1.88 [0.17; 20.77] |
| removed <i>before</i> g: | Sreedhara Diener et al JPAD 2016 AAA | 2 25 25 9 | 26 1649 1262 1675 | 2 19 12 8 | 24 1649 1277 1675 | 0.4% 0.6% 3.3% 2.8% 1.9% | 1.43 [0.22; 9.42] 1.32 [0.72; 2.41] 2.13 [1.07; 4.26] 1.13 [0.43; 2.92] |
| cate records removed original studies (n = 50) | Cook JPPP JPAD 2016 ASPREE | 1645 103 25 162 | 19934 7220 1262 9525 | 1452 31 12 102 | 19942 7244 1277 9589 | 6.2% 4.4% 2.8% 5.4% | 1.15 [1.06; 1.23] 3.37 [2.25; 5.04] 2.13 [1.07; 4.26] 1.61 [1.25; 2.07] |
| excluded** es (n = 819) | ARRIVIE TIPS-3 Fiore Gavaghan Gavaghan | 61 12 37 2 2 | 6270 2860 2537 127 127 | 29 10 54 0 0 | 6276 2853 2522 110 110 | 4.2% 2.2% 4.3% 0.3% 0.3% | 2.12 [1.36; 3.30] 1.20 [0.52; 2.78] 0.68 [0.44; 1.03] 4.40 [0.21; 92.69] 4.40 [0.21; 92.69] |
| alyses (n = 78) | ELWOOD | 8 | 832 | 4 | 850 | 1.3% | 2.05 [0.62; 6.85] |
| | CDPA | 23 | 727 | 13 | 727 | 2.8% | 1.79 [0.90; 3.57] |
| | PARIS | 52 | 810 | 10 | 406 | 2.8% | 2.72 [1.37; 5.40] |
| | Hess et | 4 | 80 | 1 | 80 | 0.5% | 4.16 [0.45; 38.05] |
| | AMIS | 75 | 2267 | 45 | 2257 | 4.6% | 1.68 [1.16; 2.45] |
| | BREDDIN | 3 | 317 | 0 | 309 | 0.3% | 6.89 [0.35; 133.92] |
| | CCSG | 0 | 144 | 2 | 139 | 0.3% | 0.19 [0.01; 4.00] |
| | FIELDS | 1 | 88 | 0 | 90 | 0.2% | 3.10 [0.12; 77.20] |
| | FIELDS 2 | 2 | 65 | 0 | 60 | 0.2% | 4.76 [0.22; 101.27] |
| | Ehresman | 1 | 215 | 2 | 213 | 0.4% | 0.49 [0.04; 5.48] |
| | POPADAD | 28 | 638 | 31 | 638 | 3.7% | 0.90 [0.53; 1.52] |
| | Peto | 89 | 3429 | 27 | 1710 | 4.2% | 1.66 [1.08; 2.57] |
| Total (95% CI) 106288 103882 100.0% 1.65 [1.42; 1.93 Heterogeneity: Tau ² = 0.0996; Chi ² = 113.98, df = 49 (P < 0.01); I ² = 57% | | | | | | | |

CI: confidence interval. MH: Mantel-Haenszel

References



