Systematic review and meta-analysis of febrile neutropenia risk with TCH(P) in HER2-positive early breast cancer

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TCH(P) = docetaxel, carboplatin and trastuzumab +/- pertuzumab

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Background & Methods

- **TCH(P)**: preferred (neo)adjuvant regimen for HER2+ breast cancer (NCCN 1-2021)[1]
- Risk of febrile neutropenia → indication for PP G-CSF
  - <10% → no PP
  - 10-20% → patient-related risk factors
  - **>20% → PP**
- Current PP G-CSF use with TCH(P) is **heterogeneous**
- **PRISMA** guidelines for systematic reviews and meta-analyses
- Meta-analysis: **random effects model**

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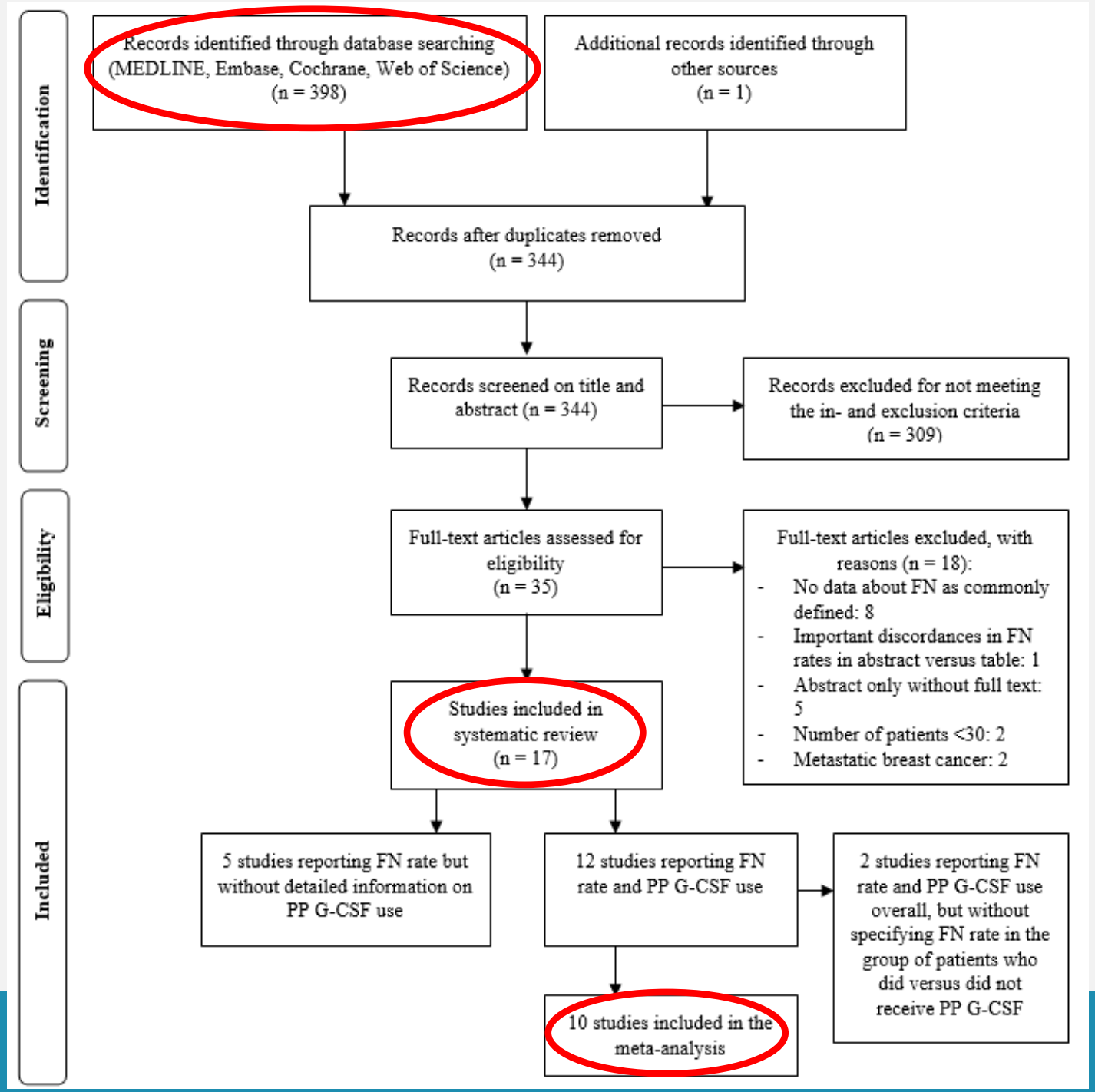
PP G-CSF = primary prophylactic granulocyte colony-stimulating factor

1. Gradishar WJ, Moran MS, Abraham J, Aft R, Agneese D, Allison KH, Anderson BO, et al. Breast Cancer NCCN Guidelines Version 1.2021. https://www.nccn.org/professionals/physician_gls/default.aspx (January 15, 2021; date last accessed).

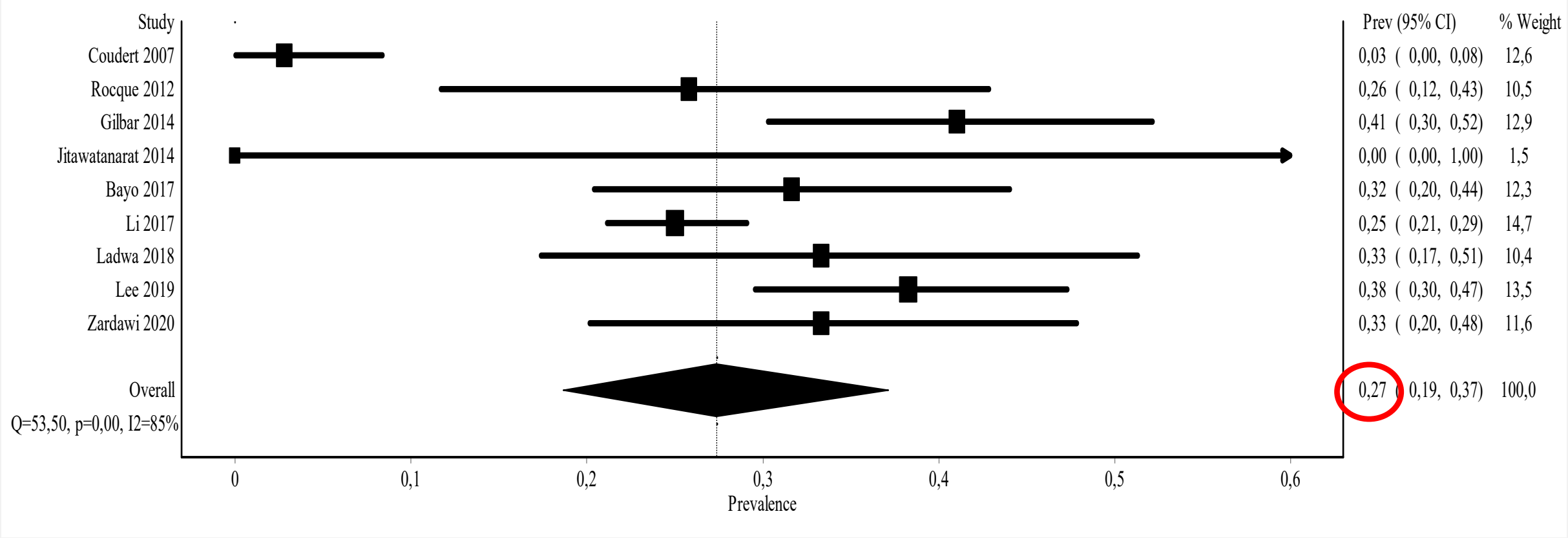
Study selection



FN = febrile neutropenia
TCH(P) = docetaxel, carboplatin and trastuzumab +/- pertuzumab
PP G-CSF = primary prophylactic granulocyte colony-stimulating factor

Results

Febrile neutropenia incidence in patients who **did not receive PP G-CSF** (n = 889)



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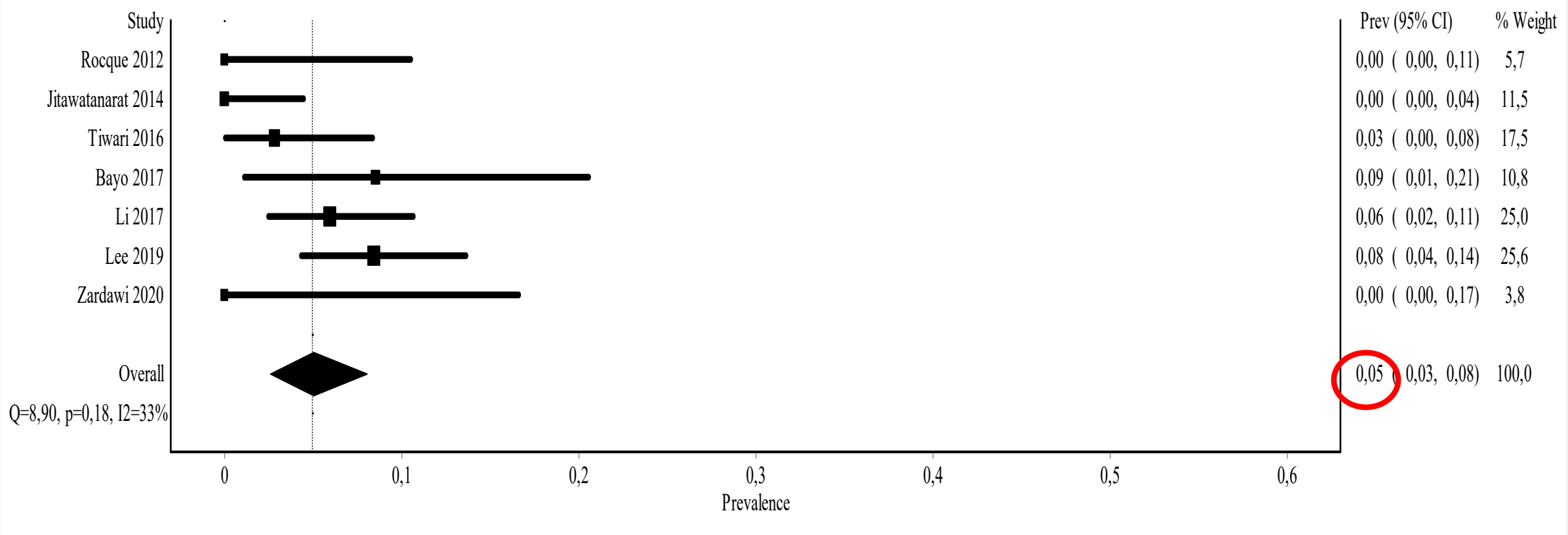
Results

Febrile neutropenia incidence in patients administered **PP G-CSF** (n = 445)



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Discussion

- FN risk **without PP G-CSF >20% ⇔ <10% with PP G-CSF**
- Importance of reporting G-CSF use in trials
- Discrepancy between **real life population** and **clinical trials**
  - FN definition
  - Patient selection
  - Genetic differences
- TCH vs TCHP: no relevant impact of **pertuzumab**

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Take home message

- **TCH(P) use** in HER2+ early breast cancer may further increase after release of NCCN guidelines.

- FN risk
  - without PP G-CSF **27%** (95% CI 19 to 37%)
  - with PP G-CSF **5%** (95% CI 3 to 8%)

- **PP G-CSF** is **required** when prescribing TCH(P).

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