**Supplementary Figure 1. PRISMA flowchart of literature review and identification of studies for inclusion in the NMA.**

Diagram

Description automatically generatedNMA, network meta-analysis.

**Supplementary Figure 2. Bayesian FE fractional polynomial estimates for (A) PFS by study arm; (B) PFS by treatment; (C) OS by study arm; (D) OS by treatment.**

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FE, fixed effects; OS, overall survival; PFS, progression-free survival; T-DM1, trastuzumab emtansine. Dotted line indicates reference treatment (lapatinib plus capecitabine)

**Supplementary Figure 3. Analyses of heterogeneity and inconsistency between included trials reporting PFS data. (A) Node-splitting analysis (inconsistency) of direct and indirect evidence [34,57]. (B) Duplicate comparisons (heterogeneity).**

Chart, box and whisker chart

Description automatically generatedHiggins I2 = 44.563%; Cochran’s Q = 1.804 (P = 0.179).

CI, credible interval; HR, hazard ratio; PFS, progression-free survival; RE, random effects; T-DM1, trastuzumab emtansine.

**Supplementary Figure 4. SUCRA scores for Bayesian fixed-effects analysis of (A) PFS hazard ratios and (B) differences in mean PFS based on fractional polynomial NMA (with anchoring). Chart, bar chart

Description automatically generated**

NMA, network meta-analysis; PFS, progression-free survival; SUCRA, surface under the cumulative rankogram; T-DM1, trastuzumab emtansine.

**Supplementary Figure 5. Bayesian random-effects pairwise comparisons. (A) PFS hazard ratios. (B) Differences in mean PFS based on fractional polynomial NMA (with anchoring).**

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NMA, network meta-analysis; PFS, progression-free survival; T-DM1, trastuzumab emtansine.

**Supplementary Figure 6. Log(-log(survival)) plots and tests of non-proportionality for trials included in the fractional polynomial NMAs for (A) PFS and (B) OS.**

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Data that meet the proportional hazards assumption will produce approximately parallel survival curves. Additionally, chi-squared tests of proportional hazards assumption are shown on each plot; comparisons that violated this assumption are indicated in red. OS, overall survival; PFS, progression-free survival; T-DM1, trastuzumab emtansine.

**Supplementary Figure 7. Mean survival estimates based on fractional polynomial analysis. (A) fixed-effects estimates for PFS; (B) random-effects estimates for PFS; (C) fixed-effects estimates for OS; (D) random-effects estimates for OS.**

**A**

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**C**

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**D**

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**Chart, box and whisker chart

Description automatically generatedSupplementary Figure 8. Analysis of heterogeneity between duplicate comparisons of OS.**

Higgins I2 = 63.738%; Cochran’s Q = 2.758 (P = 0.097). OS, overall survival; T-DM1, trastuzumab emtansine.

**Supplementary Figure 9. SUCRA scores for Bayesian fixed-effects analysis of (A) OS hazard ratios and (B) differences in mean OS based on fractional polynomial NMA (with anchoring). Chart, bar chart

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Chart, bar chart

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NMA, network meta-analysis; OS, overall survival; PFS, progression-free survival; SUCRA, surface under the cumulative rankogram; T-DM1, trastuzumab emtansine.

**Supplementary Figure 10. Bayesian random-effects pairwise comparisons. (A) OS hazard ratios. (B) Differences in mean OS based on fractional polynomial NMA (with anchoring).**

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NMA, network meta-analysis; OS, overall survival.