

Supplementary figure legends

Supplementary Figure 1. Effect sizes comparing covariate values for patients **who underwent microwave ablation and those **who underwent** resection before propensity score analysis (red) and after propensity score matching (PSM, green) and after inverse-probability-of-treatment-weighting (IPW, blue). Effect size values <0.1 indicated very small differences; between 0.1 and 0.3 indicated small differences, between 0.3 and 0.5 indicated moderate differences, and >0.5 indicated large differences.**

Supplementary Figure 2. Kaplan-Meier survival curves comparing 5-year overall survival (OS) and recurrence-free survival (RFS) among patients with multifocal HCCs **within the Milan criteria **who underwent** microwave ablation (MWA) or resection (RES). OS in the (A) overall population, (B) propensity-score-matched cohorts, and (C) inverse-probability-of-treatment-weighting (IPW)-adjusted cohorts; RFS in the (D) overall population, (E) propensity-score-matched cohorts, and (F) IPW-adjusted cohorts.**

Supplementary Figure 3. Kaplan-Meier survival curves comparing 5-year overall survival (OS) and recurrence-free survival (RFS) among patients with HCC >3 cm **within the Milan criteria **who underwent** microwave ablation (MWA) or resection (RES). OS in the (A) overall population, (B) propensity-score-matched cohorts, and (C) inverse-probability-of-treatment-weighting (IPW)-adjusted cohorts; RFS in the (D) overall population, (E) propensity-score-matched cohorts, and (F) IPW-adjusted cohorts.**

Supplementary Figure 4. Kaplan-Meier survival curves comparing 5-year overall survival (OS) and recurrence-free survival (RFS) among patients with liver disease of Albumin-Bilirubin grade 1 (ALBI-1) **who underwent microwave ablation (MWA) or**

resection (RES). OS in the (A) overall population, (B) propensity-score-matched cohorts, and (C) inverse-probability-of-treatment-weighting (IPW)-adjusted cohorts; RFS in the (D) overall population, (E) propensity-score-matched cohorts, and (F) IPW-adjusted cohorts.

Supplementary Figure 5. Kaplan-Meier survival curves comparing 5-year overall survival (OS) and recurrence-free survival (RFS) among patients with liver disease of Albumin-Bilirubin grade 2 (ALBI-2) who underwent microwave ablation (MWA) or resection (RES). OS in the (A) overall population, (B) propensity-score-matched cohorts, and (C) inverse-probability-of-treatment-weighting (IPW)-adjusted cohorts; RFS in the (D) overall population, (E) propensity-score-matched cohorts, and (F) IPW-adjusted cohorts.

Supplementary Figure 6. Kaplan-Meier survival curves comparing 5-year overall survival (OS) and recurrence-free survival (RFS) among younger patients (<60 years) who underwent microwave ablation (MWA) or resection (RES). OS in the (A) overall population, (B) propensity-score-matched cohorts, and (C) inverse-probability-of-treatment-weighting (IPW)-adjusted cohorts; RFS in the (D) overall population, (E) propensity-score-matched cohorts, and (F) IPW-adjusted cohorts.

Supplementary Figure 7. Kaplan-Meier survival curves comparing 5-year overall survival (OS) and recurrence-free survival (RFS) among elder patients (≥ 60 years) who underwent microwave ablation (MWA) or resection (RES). OS in the (A) overall population, (B) propensity-score-matched cohorts, and (C) inverse-probability-of-treatment-weighting (IPW)-adjusted cohorts; RFS in the (D) overall population, (E) propensity-score-matched cohorts, and (F) IPW-adjusted cohorts.