# Results

The study included a total of 2,888 postmenopausal women or men with HR+/HER2‒ MBC who started either palbociclib plus AI (n=1,324) or AI alone (n=1,564) as first-line therapy between February 3, 2015, and March 31, 2020. Out of these, 10 men were included in the palbociclib group and 19 men in the AI alone group. After adjustment using stabilized inverse probability of treatment weighting (sIPTW), the median age was found to be 70 years in both treatment groups. The majority of patients, approximately 68%, were white in each treatment group.  
  
The median duration of follow-up after sIPTW adjustment was 23.9 months (IQR, 12.8–38.0) in the palbociclib plus AI group and 24.5 months (IQR, 12.0–42.9) in the AI alone group.  
  
In terms of overall survival (OS), the unadjusted analysis of the full cohort showed that the median OS was significantly longer in the palbociclib group compared to the AI group (P<0.0001). After sIPTW adjustment, the OS (95% CI) was 49.1 months (45.2–57.7) in the palbociclib group and 43.2 months (37.6–48.0) in the AI group, with a hazard ratio of 0.76 (95% CI, 0.65–0.87; P<0.0001). The OS rates at 24, 36, and 48 months were 76.6%, 62.9%, and 52.4% in the palbociclib plus AI group, and 65.6%, 54.4%, and 46.8% in the AI alone group. The propensity score matching (PSM) sensitivity analysis also showed a longer OS in the palbociclib group compared to the AI group, with an OS (95% CI) of 57.8 months (47.2–not estimable) and 43.5 months (37.6–48.9), respectively, and a hazard ratio of 0.72 (95% CI, 0.62–0.83; P<0.0001).  
  
The study also evaluated real-world progression-free survival (rwPFS). The unadjusted analysis showed a significantly longer median rwPFS in the palbociclib group compared to the AI group (P<0.0001). After sIPTW adjustment, the rwPFS (95% CI) was 19.3 months (17.5–20.7) in the palbociclib group and 13.9 months (12.5–15.2) in the AI group, with a hazard ratio of 0.70 (95% CI, 0.62–0.78; P<0.0001). The PSM analysis also showed a longer rwPFS in the palbociclib group compared to the AI group, with an rwPFS (95% CI) of 19.8 months (17.3–21.9) and 14.9 months (12.9–16.9), respectively, and a hazard ratio of 0.72 (95% CI, 0.63–0.82; P<0.0001).  
  
Subgroup analyses were conducted to assess the impact of different factors on OS and rwPFS. These analyses showed a consistent benefit of palbociclib plus AI compared to AI alone across most subgroups after sIPTW adjustment.  
  
Regarding subsequent second-line treatments, data on any second-line treatment were available for approximately 50% of patients in the palbociclib group and 65% of patients in the AI alone group. Among these patients, around 21% in the palbociclib group and 33% in the AI group received a CDK4/6 inhibitor as second-line treatment.  
  
In summary, the study demonstrated that the combination of palbociclib plus AI as first-line therapy for HR+/HER2‒ MBC resulted in longer overall survival and real-world progression-free survival compared to AI alone. These findings were consistent across various subgroups. However, it is important to note that the study has certain limitations, such as its retrospective nature and potential biases associated with real-world data analysis. Further research and randomized controlled trials are needed to confirm these findings.