**LEGENDS supplemental material**

**Supplemental Table 1. Multivariate regression analysis of CD34+cell harvest yield**

Regression coefficients (β) with their corresponding 95% confidence interval (CI). LOH1p, 1p loss of heterozygosity.

**Supplemental Table 2. Quality of harvested CD34+cells**

Analysis of clonogenic output: capacity of the collected CD34+cells to differentiate into granulocyte/ macrophage progenitors (CFU-GM) as a measure of harvest quality. 81 samples obtained from 44 patients, treated with or without 131I-MIBG, and collected at apheresis day 1-4. Table shows mean quality (CFU-GM per CD34+cell) with their corresponding 95% confidence interval (CI). CFU-GM, Colony-forming units granulocytes- macrophage.

**Supplemental Figure 1. Time to neutrophil reconstitution**

Cumulative percentage of patients achieving neutrophil reconstitution after autologous stem cell transplantation (ASCT). 131I-MIBG-therapy group: black line, chemotherapy-only: grey line. Time to event was defined as time from ASCT until time of neutrophil engraftment (>0.5x109/L), censor (+) is defined as need for second reinfusion or death. Actual number of patients at different time points is shown below the figure = numbers at risk. *P*-value is based on log-rank test.

**Supplemental Figure 2. Clonogenic output of harvested CD34+cells**

Box plots show no significant difference in CD34+cell harvest quality (clonogenic output; expressed as CFU-GM/ CD34+cell ratio) of patients treated with 131I-MIBG (n=25) compared to chemotherapy-only (n=19). CFU-GM, Colony-forming units granulocyte-macrophage.