## **Supplementary materials**

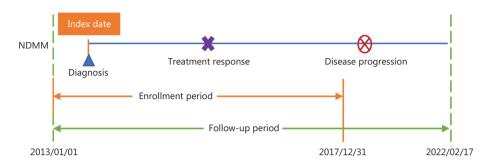


Figure S1 Overview of the study design. NDMM, newly diagnosed multiple myeloma.

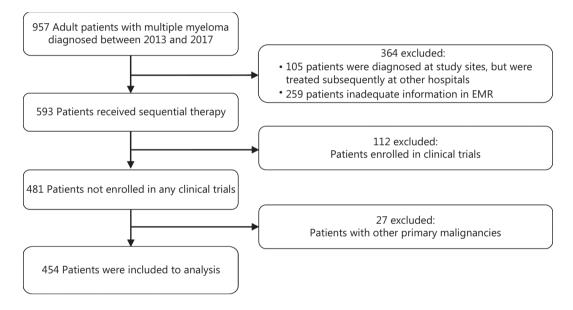
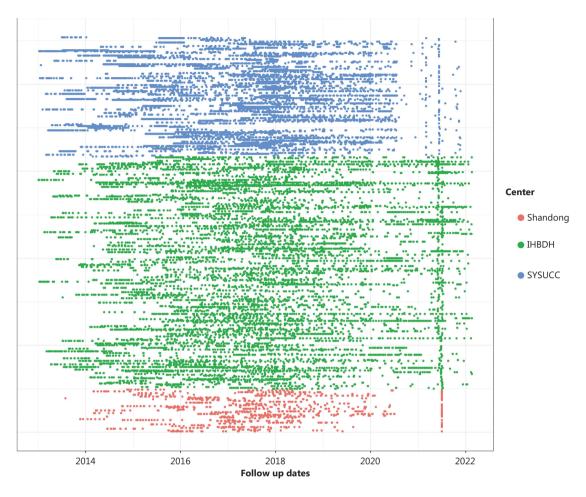
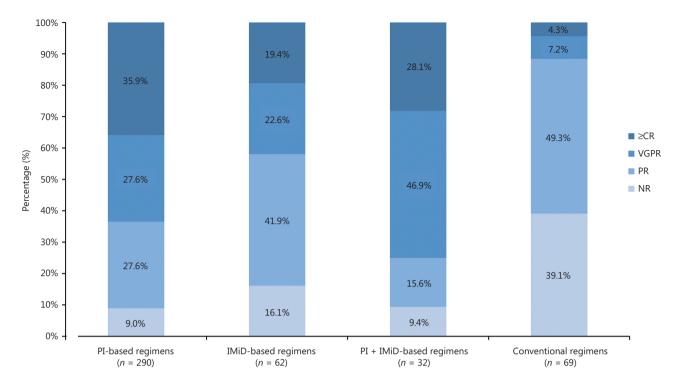


Figure S2 Study population. EMR, electronic medical records.



**Figure S3** Spaghetti plot of follow-up time for patients. IHBDH, Institute of Hematology and Blood Diseases Hospital; Shandong, Shandong Provincial Hospital; SYSUCC, Sun Yat-Sen University Cancer Center.



**Figure S4** Induction treatment response among patients with different treatment regimens. CR, complete response; IMiD, immunomodulatory drugs; NR, no response; PI, proteasome inhibitor; PR, partial response; and VGPR, very good partial response.

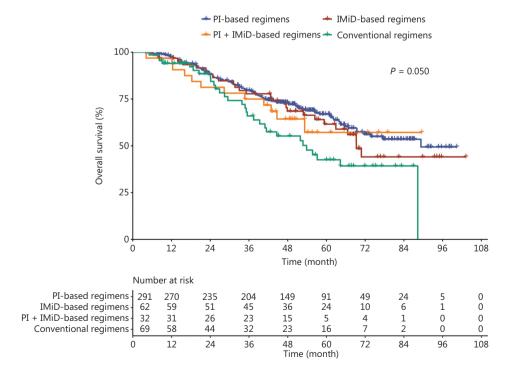
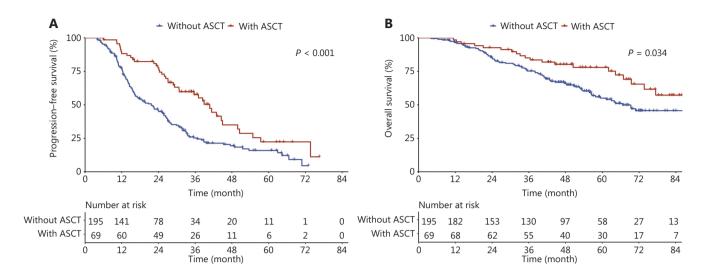


Figure S5 Overall survival among patients with different treatment regimens. IMiD, immunomodulatory drug; PI, proteasome inhibitor.



**Figure S6** Survival outcomes according to ASCT status among patients with R-ISS II/III disease, including (A) progression-free survival and (B) overall survival by ASCT status among patients with R-ISS II/III disease. ASCT, autologous stem cell transplantation; R-ISS, Revised-International Staging System.

**Table S1** Major induction regimens.

PI-based	IMiD-based	PI+IMiD-based	Conventional
regimens	regimens	regimens	regimens
VD	RD	VRD	DECP
VC	RCD	VTD	VCR+AD
VAD	TAD	VCDT	VCR+ACD
VCD	TCD	VADR	
VDE	MPT	VMPT	
VDECP	TADC	VADCT	

DECP, dexamethasone/etoposide/cyclophosphamide/cisplatin; IMiD, immunomodulatory drug; MPT, melphalan/prednisolone/ thalidomide; PI, proteasome inhibitor; RCD, lenalidomide/ cyclophosphamide/dexamethasone; RD, lenalidomide/dexamethasone; TAD, thalidomide/adriamycin/dexamethasone; TADC, thalidomide/ adriamycin/dexamethasone/cyclophosphamide; TCD, thalidomide/ cyclophosphamide/dexamethasone; VAD, bortezomib/adriamycin/ dexamethasone; VADCT, bortezomib/adriamycin/dexamethasone/ cyclophosphamide/thalidomide; VADR, bortezomib/adriamycin/ dexamethasone/lenalidomide; VC, bortezomib/cyclophosphamide; VCD, bortezomib/cyclophosphamide/dexamethasone; VCDT, bortezomib/cyclophosphamide/dexamethasone/thalidomide; VD, bortezomib/dexamethasone; VDE, bortezomib/dexamethasone/ etoposide; VDECP, bortezomib/dexamethasone/etoposide/ cyclophosphamide/cisplatin; VCR+AD, vinblastine/adriamycin/ dexamethasone; VCR+ACD, vinblastine/adriamycin/cyclophosphamide dexamethasone; VMPT, bortezomib/melphalan/prednisolone/ thalidomide; VRD, bortezomib/lenalidomide/dexamethasone; VTD, bortezomib/thalidomide/dexamethasone