

Supplementary Materials: Exploration of Artificial Intelligence Usage in Multiple Myeloma Research with ARIES

Table S1. Attributes Covered by Multiple Myeloma Ontology

Parent Attribute	First Child Attribute	Second Child Attribute	Third Child Attribute
CRAB	Anemia Bone lesion Drop of Hb Hypercalcemia Renal impairment SLIM-CRAB		
Cytogenetic	High risk cytogenetic	del(17/17p) gain(1q) t(14;16) t(14;20) t(4;14)	
Laboratory	del(1p) del(13q) t(11;14) Hyperdiploidy Tetrasomy Trisomy Free kappa light chain Free lambda light chain kappa light chain (SU) lambda light chain (SU) Beta 2 microglobulin CRP GFR Hemoglobin Immunoglobulin A Immunoglobulin D Immunoglobulin G Immunoglobulin M Calcium Creatinin LDH Leucocytes Lymphocytes Neutrophiles Thrombocytes Total albumin level serum Total albuminuria level (SU) Total protein level serum Total proteinuria level (SU) Urea		
	Type of myeloma	Asecretoric myeloma	

Myeloma specific	Biclonal myeloma Extramedullary myeloma Light chain myeloma Multiple myeloma Monoclonal gammopathy of undetermined significance (MGUS) Smoldering multiple myeloma Solitary plasmocytoma		
	Bence Jones proteinuria Bence Jones proteinemia Primary diagnosis Heavy chain type Light chain type Bone marrow infiltration Paraprotein Pathological fracture Serum light chain kappa/lambda ratio		
	Gastrointestinal	Diarrhea Hepatomegaly Mucositis Soor Splenomegaly Stomatitis	
	Hematological	<table border="1"> <tr> <td>Cellular change</td> <td> Leucocytopenia Depletion of lymphocytes Neutropenia Pancytopenia Thrombocytopenia Tricytopenia </td> </tr> </table> Immune paresis B symptoms Graft versus host Hyperviscosity Paraneoplasia Plasma cell leukemia	Cellular change
Cellular change	Leucocytopenia Depletion of lymphocytes Neutropenia Pancytopenia Thrombocytopenia Tricytopenia		
Infection, Reactivation	Cytomegalovirus Febrile neutropenia Herpes simplex virus Influenza Mycosis Fungal pneumonie Epstein-Barr virus Hepatitis B virus Respiratory syncytial virus Superinfection Varizalle zoster virus		

Adverse Events, Complications, Comorbidities		Cardiac arrhythmia	AV block Bradycardia Sick sinus syndrom Tachycardia Atrial fibrillation Atrial flutter
	Kardiological		Cerebrovascular Occlusive Disease Endocarditis Congestive heart failure Valvular insufficiency Hypertensive crisis Myocarditis Pericarditis Syncope Venous thromboembolism Thrombosis
	Nephrological		Acute kidney failure Amyloidosis CAST Nephropathia Chronic kidney failure Exacerbation of retention parameters Terminal kidney failure
	Neurological		Compression of myelon Polyneuropathy Spinal canal stenosis
			Admission on Intensive care unit Death on Intensive care unit Vertebral compression fracture Exanthema Fatigue Fever Cachexia Osteonecrosis of the jaw Adrenal insufficiency Pneumonia Sepsis Side effect
Patient			Age primary diagnosis ECOG Date of birth ICD 10 Karnofsky
Response criteria			CR MR NC nCR PD PR

	sCR Stable disease VGPR	
Risk factors	Metabolic risk factors	Hypercholesterolemia Hypertriglycerinemia Dyslipoproteinemia Hyperlipoproteinemia Hypolipoproteinemia Diabetes mellitus Homocysteinemia
	Obesity Smoker Arterial hypertension Coronary heart disease	
Staging	ISS revised ISS Salmon and Durie	
Therapy	Bisphosphonate therapy Allogeneic stem cell transplantation Autologous stem cell transplantation Stem cell apheresis Stem cell mobilisation Start of therapy Dose reduction End of therapy HD melphalan Progression Protocol Radiation Refractory Relapse Response	
Substances	Adriamycin Bendamustin Bortezomib Carfilzomib Carmustin Cisplatin Cyclophosphamid Cytarabin Daratumumab Denosumab Dexamethason Doxorubicin Elotuzumab Etoposid Ixazomib Lenalidomid	

Panobinostat
Pomalidomid
Prednisolon
Rituximab
Thalidomid
Vincristin
