

Monosomal karyotype as an adverse prognostic factor in patients with acute myeloid leukemia treated with allogeneic hematopoietic stem-cell transplantation in first complete remission: a retrospective survey on behalf of the ALWP of the EBMT

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Supplemental file 1. List of contributing centers by decreasing number of patients enrolled in the study:

Helsinki University Central Hospital; Department of Medicine; Helsinki; Finland;
Hopital St. Louis; Dept.of Hematology - BMT; Paris; France;
Erasmus MC-Daniel den Hoed Cancer Centre; Rotterdam; The Netherlands;
Hopital Purpan; CHU de Toulouse Dept. Hematologie; Toulouse; France;
Karolinska University Hospital; Dept. of Hematology; Huddinge; Sweden;
University Medical Center St. Radboud; Nijmegen; The Netherlands;
CHU Bordeaux; Hôpital Haut-leveque; Pessac; France;
Leiden University Hospital; Leiden; The Netherlands ;
Programme de Transplantation&Therapie Cellulaire; Centre de Recherche en Cancérologie de
Marseille; Institut Paoli Calmettes; Marseille; France ;
CHU Hautepierre; Service d`Onco Hematologie; Strasbourg; France ;
University Medical Centre; Dept. of Haematology; Utrecht; The Netherlands ;
Centre for Clinical Haematology; Queen Elizabeth Hospital; Birmingham; United Kingdom ;
Hopital Jean Minjoz; Service d`Hématologie; Besancon; France ;
Hopital Saint Antoine; Paris; France ;
University Hospital Gasthuisberg; Dept. of Hematology; Leuven; Belgium ;
Nottingham City Hospital; Nottingham; United Kingdom ;
CHU Nantes; Dept. D`Hematologie; Nantes; France ;
Hôpital HURIEZ; UAM allo-CSH; CHRU; Lille; France ;
Universitaetsklinikum Dresden; Medizinische Klinik und Poliklinik I; Dresden; Germany ;
Deutsche Klinik für Diagnostik; KMT Zentrum; Wiesbaden; Germany ;
University Hospital; Basel; Switzerland ;
Charles University Hospital; Dept. of Hematology/Oncology; Pilsen; Czech Republic ;
University Hospital Eppendorf; Department of Stem cell Transplantation; Hamburg; Germany ;
University of Freiburg; Dept. of Medicine -Hematology; Oncology; Freiburg; Germany ;
Centre Hospitalier Lyon Sud; Service Hematologie; Lyon; France ;
Hannover Medical School; Department of Haematology; Hemostasis; Oncologyand Stem Cell
Transplantation; Hannover; Germany 0 ;
Dept. Haematology and Stem Cell Transplant; Budapest; Hungary ;
Hôpital Necker; Paris; France ;
University Hospital Leipzig; Div.Hematology; Oncology and Hemostasiology; Leipzig; Germany ;
University Hospital Maastricht; Maastricht; The Netherlands ;
Hopital La Miletrie; Poitiers; France ;
Azienda Ospedaliera Papa Giovanni XXIII; Hematology and Bone Marrow Transplant Unit; Bergamo;
Italy ;
Hôpital Henri Mondor; Creteil; France ;
Hopital A. Michallon; Hématologie Clinique; Pole Cancérologie; Grenoble; France ;
Hopital d'Enfants; Unité de Transplantation Médullaire; Vandoeuvre les Nancy; France ;
University Hospital; Lund; Sweden ;
Sahlgrenska University Hospital; Goeteborg; Sweden ;
Hospital U. Marqués de Valdecilla; Santander; Spain ;
University Hospital; Dept. of Hematology; Linköping;
Sweden ; Univ.`La Sapienza`; Rome; Italy ;
CHRU; Service des Maladies du Sang; Angers; France ;
Klinik fuer Innere Medzin III; Universitätsklinikum Ulm; Ulm; Germany ;
Cliniques Universitaires St. Luc; Brussels; Belgium ;
Hopitaux Universitaires de Geneve; Geneva; Switzerland ;
University Medical Center Groningen (UMCG) ; Groningen; The Netherlands ;

Rome Transplant Network; "Tor Vergata" University of Rome; Stem Cell Transplant Unit; Policlinico Universitario Tor Vergata; Rome; Italy ;
Turku University; Turku; Finland ;
St. James Hospital Trinity College; Dublin; Ireland ;
GKT School of Medicine; Dept. of Haematological Medicine; London; United Kingdom ;
CHU Lapeyronie; Département d`Hématologie Clinique; Montpellier; France ;
Centre Henri Becquerel; Rouen; France ;
Klinikum Nürnberg; Nürnberg; Germany ;
Department of Haematology; Oxford; United Kingdom ;
Hospital Clínico; Salamanca; Spain ;
Hospital Santa Creu i Sant Pau; Barcelona; Spain ;
University of Liege; Liege; Belgium ;
Umea University Hospital; Umeå; Sweden ;
North Trent BMT Programme (Adults) ; Sheffield; United Kingdom ;
Hopsital Pitie-Salpetriere; Paris; France ;
Southampton General Hospital; Southampton; United Kingdom ;
Leicester Royal Infirmary; Leicester; United Kingdom ;
University of Napoli; `Federico II` Medical School; Division of Hematology; Napoli; Italy ;
University of Saarland; Homburg; Germany ;
Ospedale di Careggi; Firenze; Italy ;
ddenbrookes Hospital; Cambridge; United Kingdom ;
Hematology Division; Chaim Sheba Medical Center; Tel-Hashomer; Israel ; Azienda Ospedaliera S. Giovanni; Torino; Italy ;
VU University Medical Center; Department of Hematology (Br) ; Amsterdam; The Netherlands ;
Ospedale La Maddalena - Dpt. Oncologico; Palermo; Italy ;
Hospital Universitari Germans Trias i Pujol; Barcelona; Spain ;
Centre Hospitalier Universitaire de Rennes; Rennes; France ;
ICO – Hospital Duran i Reynals; Barcelona; Spain ;
Imperial College; London; United Kingdom ;
Ospedale San Martino; Department of Haematology II; Genova; Italy ;
University College London Hospital; London; United Kingdom ;
Ospedale San Gerardo; Monza; Italy ;
Hospital Vall d`Hebron; Barcelona; Spain ;
Hôpital Percy; Clamart; France ;
Christie NHS Trust Hospital; Manchester; United Kingdom ;
Fédération de Greffe de Moelle et de; Clermont-Ferrand; France;
King Faisal Specialist Hospital & Research Centre; Oncology (Section of Adult Haematolgy/BMT) ; Riyadh; Saudi Arabia ;
CHU Morvan; Brest; France ;
Constantiaberg Medi-Clinic; Cape Town; South Africa ;
Institut Jules Bordet; Brussels; Belgium ;
Hopital Nord; Saint Etienne Cedex ; France ;
Policlinico San Matteo; Pavia; Italy ;
Inst. Portugues de Oncologia do Porto; Porto; Portugal ;
Hôpital de l`ARCHET I; Nice; France ;
University of Debrecen; Debrecen; Hungary ;
Ospedale Maggiore di Milano; Milano; Italy ;
Evangelismos Hospital; Athens; Greece ;
Ospedale Ferrarotto; Catania; Italy ;
Centre Hospitalier Universitaire; Caen; France ;
University Hospital; Dept. of Bone Marrow Transplantation; Essen; Germany ;
University Hospital; Uppsala; Sweden ;

George Papanicolaou General Hospital; Thessaloniki; Haematology Department / BMT Unit; Thessaloniki; Greece ;
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Rikshospitalet; Department of MedicineThe National Hospital; Oslo; Norway ;
Gustave Roussy; institut de cancérologie; BMT Service; Division of Hematology; Department of Medical Oncology; Villejuif; France ;
Klinikum Augsburg; II Medizinische Klinik; Augsburg; Germany ;
Bologna University; S.Orsola-Malpighi Hospital; Bologna; Italy ;
Haematology Department; Leeds; United Kingdom ;
Belfast City Hospital; Belfast; United Kingdom ;
Policlinico G.B. Rossi; Verona; Italy ;
H SS. Antonio e Biagio; Alessandria; Italy ;
Medical University of Silesia; Univ. Dept. of Haematology and BMT; Katowice; Poland ;
Glasgow Royal Infirmary; Glasgow; United Kingdom ;
Ospedale V. Cervello; Palermo; Italy ;
Manchester Royal Infirmary; Manchester; United Kingdom ;
University Hospital VUB; Brussels; Belgium ;
Gazi Universitesi Tip Fakültesi; Ankara; Turkey ;
Royal Liverpool University Hospital; Liverpool; United Kingdom ;
University of Heidelberg; Medizinische Klinik u. Poliklinik V; Heidelberg; Germany ;
University Regensburg; Regensburg; Germany ;
Charité Universitätsmedizin Berlin; Campus Virchow KlinikumMedizinische Klinik m. S. Hämatologie/Onkologie; Berlin; Germany ;
University Hospital; Zürich ; Switzerland ;
A.Z. Sint-Jan; Brugge; Belgium ;
Hospital Aranzazu; San Sebastian; Spain ;
Tel Aviv Sourasky Medical Center; Tel Aviv; Israel ;
Hacettepe University; Ankara; Turkey ;
Rigshospitalet; BMT Unit Dept. of Hematology L ;
Copenhagen; Denmark ; Royal Free Hospital and School of Medicine; London; United Kingdom ;
University Hospital Brno; Brno; Czech Republic ;
Hospital Covadonga; Oviedo; Spain ;
Institute of Haematology and Blood Transfusion; Warsaw; Poland ;
Antwerp University Hospital (UZA) ; Antwerp Edegem; Belgium ;
Hospital Clinic; Barcelona; Spain ;
Medical University Graz; Graz; Austria ;
University Hospital; Olomouc; Czech Republic ;
Medical University of Gdansk; Gdansk; Poland ;
Royal Victoria Infirmary; Newcastle-Upon-Tyne; United Kingdom ;
Hospital Clínico Universitario; Valencia; Spain ;
Canterbury Health Laboratories; Christchurch; New Zealand ;
Hospital Guglielmo da Saliceto; Piacenza; Italy ;
Royal Marsden Hospital; London; United Kingdom ;
Hosp. Reina Sofia; Córdoba; Spain ;
Academisch Ziekenhuis bij de Universiteit; Amsterdam; The Netherlands ;
Div. Stem Cell Transplantation and Immunotherapy; Kiel; Germany ;
University of Wales; Cardiff; United Kingdom ;
Universita Cattolica S. Cuore; Rome; Italy ;
Rambam Health Care Campus; Department of Hematology; Haifa; Israel ;
University of Milano; Milano; Italy ;

S. Bortolo Hospital; Department of Hematology; Vicenza; Italy ;
Hospital Gregorio Marañón; Madrid; Spain ;
CHRU Limoges; Limoges; France ;
Universität Tübingen; Medizinische Klinik; Tübingen; Germany ;
Western General Hospital; Edinburgh; United Kingdom ;
Institut Universitaire de Cancérologie Centre-Val-de-Loire Hématologie et thérapie cellulaire; Tours; France ;
Hospedale Nord; Taranto; Italy ;
Univ. Est. de Campinas/TMO/UNICAMP; Campinas; Brazil ;
Azienda Ospedaliera; Reggio Calabria; Italy ;
Ankara University Faculty of Medicine; Dept. of Hematology; Adult Stem Cell Transplantation Unit; Ankara; Turkey ;
University Hospital; Udine; Italy ;
Clinica Puerta de Hierro; Madrid; Spain ;
Azienda Ospedali Riuniti di Ancona; Ancona-Torrete; Italy ;
Ospedale San Raffaele s.r.l.; Milano; Italy ;
Military Medical Academy; Warsaw; Poland ;
Robert-Bosch-Krankenhaus; Stuttgart; Germany ;
Medizinische Universitaet Wien; Klinik fuer Innere Medizin I; Knochenmarktransplantation; Vienna; Austria ;
Hadassah University Hospital; Jerusalem; Israel ;
Istituto Clinico Humanitas; Milano; Italy ;
DCTK Ctr Cell Transpl; Wroclaw; Poland ;
St. George`s Hospital; London; United Kingdom ;
Institute of Hematology and Blood Transfusion; Prague; Czech Republic ;
University Hospital Gent; Gent; Belgium ;
St. Bartholomew`s and The Royal London Hospital; London; United Kingdom ;
Birmingham Heartlands Hospital; Birmingham; United Kingdom ;
Ospedale S. Camillo-Forlanini; Rome; Italy ;
ZNA; Antwerp; Belgium ;
NHS Grampian; Aberdeen; United Kingdom ;
University Hospital; Bratislava; Slovakia ;
Philipps Universitaet Marburg; Marburg; Germany ;
Allogeneic Stem Cell Transplant Center; Würzburg; Germany ;
Charles University Hospital; 3rd Department of Internal Medicine; Hematology; Hradec Králové; Czech Republic ;
Tartu University Hospital; Tartu; Estonia ;
St.Savas Oncology Hospital; Athens; Greece ;
Sezione di Ematologia; Dipartimento di Medicina Clinica e Sperimentale; Università di Perugia; Perugia; Italy ;
Riyadh Armed Forces Hospital; Riyadh; Saudi Arabia ;
Plymouth Hospitals NHS Trust; Plymouth; United Kingdom ;
The Trustee of London Clinic; London; United Kingdom ;
Hospital San Maurizio; Bolzano; Italy ;
Inst. Portugues Oncologia; Lisboa; Portugal ;
Onco-Ematologia Pediatrica; Centro Trapianti Cellule Staminali; Ospedale Infantile Regina Margherita; Torino; Italy ;
U.O.S.A Centro Trapianti e Terapia Cellulare; Azienda Ospedaliera Universitaria Senese; Policlinico S.Maria alle Scotte; Siena; Italy ;
Bristol Royal Hospital for Children; Bristol; United Kingdom ;
Heinrich Heine Universität; Düsseldorf; Germany ;
Pesaro Hospital; Hematology & Transplant Centre; Pesaro; Italy ;

Az. Ospedaliera S. Croce e Carle; Division of Hematology; Cuneo; Italy ;
Shariati Hospital; Hematology-Oncology and BMT Research; Teheran; Iran ;
University Med. Center; Department of Hematology; Ljubljana; Slovenia ;
K. Marcinkowski University of Medical Science; Poznan; Poland ;
Hospital Morales Meseguer; Murcia; Spain ;
Istanbul Tip Fakueltesi; Istanbul; Turkey ;
Unità Operativa Oncoematologia Pediatrica; Pisa; Italy ;
Medical Park Hospitals; Stem Cell Transplant Unit; Antalya; Turkey ;
Central Clinical Hospital; Warsaw; Poland ;
AZ. Spedali Civili- Brescia Universitu of Brescia; Brescia; Italy ;
Univ. of Parma; Parma; Italy ;
Ospedale Civile; Department of Hematology; Pescara; Italy ;
University Hospital Innsbruck; Innsbruck; Austria ;
Clinica di Oncoematologia Pediatrica; Padova; Italy ;
Ospedale di Niguarda Ca` Granda; Milano; Italy ;
University Hospital Center Rebro; Zagreb; Croatia ;
Klinikum Grosshadern; Med. Klinik III; Munich; Germany ;
Ernst-Moritz-Arndt-Univer. Greifswald; Greifswald; Germany ; King Hussein Cancer Centre; Amman;
Jordan ;
Charité - Campus Benjamin Franklin; Universitaetsmedizin Berlin; Medizinische Klinik III; Hämatologie
u Onkologie; Berlin; Germany ;
University Children`s Hospital; Graz; Austria ;
Alfred Hospital; BMT Programme; Melbourne; Australia ;
KLINIKUM BREMEN - MITTE; Bremen; Germany ;
Cardarelli Hospital; Napoli; Italy ;
Arcispedale S. Maria Nuova; Reggio Emilia; Italy ;
University of Münster; Dept. of Hematol./Oncol.; Münster; Germany ;
Hospital `Virgen del Rocio`; Sevilla; Spain ;
Johannes-Gutenberg-University; Mainz; Germany ;
Univ. di Palermo; Palermo; Italy ;

Supplemental file 2. Comparison of main characteristics of younger and older MK patients.

	≤ 35 year-old	>35 year-old	p-value
Patients. n (%)	37 (20)	152 (80)	
Gender (Female:male) n (%)	17:20 (46:54)	80:72 (53:47)	0.46
Median age, years (range)	25.8 (18-35)	52.6 (36-68)	<0.0001
AML subtype (FAB) n (%)			
M0, M7 & other	27 (73)	98 (65)	0.41
M1 to M6	10 (27)	49 (32)	
Unknown		5 (3)	
Cytogenetics at diagnosis n (%)			
CK	23 (62)	107 (70)	0.33
OP	26 (70)	125 (82)	0.21
Any 7 abnormality	24 (65)	95 (63)	0.96
WBC at diagnosis (10 ⁹ /L), median(range)	8.1 (0.5-264)	4.4 (0.8-290)	0.42
Patients requiring >1 induction course to achieve CR1 n (%)	11 (36)	50 (42)	0.49
Interval diagnosis to CR1, days (range)	45 (15-110)	56 (10-174)	0.023
Donor type (MRD/MUD) n (%)	9 (30)/21 (70)	48 (38)/77 (62)	0.39
Stem cell source (BM/PB) n (%)	9 (30)/21 (70)	44 (35)/81 (65)	0.59
Intensity of conditioning regimen (MAC/RIC) n (%)	34 (94)/2 (6)	81 (56)/65 (44)	<0.0001

MK=monosomal karyotype, CK=complex karyotype, OP=other poor risk cytogenetics, any 7 abnormality= any abnormality involving chromosome 7, WBC=white blood cell count, MRD=matched related donor, MUD=matched unrelated donor, BM=bone marrow, PB=peripheral blood stem cells, MAC=myeloablative conditioning, RIC= reduced intensity conditioning.