



:medac

TREOSULFAN IN HSCT

Abstracts

**HIGHLIGHTS
PRESENTED AT
ASH 2024
AND
TANDEM MEETINGS 2025**

Dear Reader,

We are delighted to present to you this brochure highlighting the significant contributions and findings related to Treosulfan presented at two major hematology conferences. The Annual Meeting of the American Society of Hematology, held from December 7-10, 2024, in San Diego, California, and the Tandem Meetings (Transplantation & Cellular Therapy Meetings of ASTCT and CIBMTR), taking place from February 12-15, 2025, in Honolulu, Hawaii, showcased groundbreaking research and clinical advancements in the field.

In this document, you will find results from several clinical trials on hemophilia, stem cell transplants for leukemia, and conditioning regimens for pediatric patients. It highlights significant advancements in hematology, such as novel gene therapies and comparative studies on treatment efficacy. Our aim is to equip you with valuable knowledge and updates that will be of value for your clinical practice.

We hope you enjoy reading this brochure and find it both informative and engaging.

Yours,

The logo for medac, featuring a stylized blue and green icon followed by the word "medac" in a bold, lowercase, sans-serif font.

Abbreviations

a/cGvHD	Acute/Chronic Graft-versus-Host-Disease
AE	Adverse Event(s)
ALL	Acute Lymphoblastic Leukemia
AML	Acute Myeloid Leukemia
ASCT	Autologous Stem Cell Transplantation
ATG	Anti-Thymocyte Globulin
Bu	Busulfan
CD	Cluster of Differentiation
CKD	Chronic Kidney Disease
Clo	Clofarabine
CR	Complete Remission
CTx	Chemotherapy
d	Day(s)
DFS	Disease-free Survival
ET3	Enhanced Transduction Efficiency 3
Flu	Fludarabine
FTT	Fludarabine, Treosulfan, Thiotepa
FVIII	Coagulation Factor VIII
GRFS	Graft-versus-Host Disease-Free, Relapse-Free Survival
haplo	Haploidentical
HDCT	High-dose Chemotherapy
HR	High Risk
HSCT	Hematopoietic Stem Cell Transplantation
LFS	Leukemia-free Survival
LV	Lentiviral Vector
Mel	Melphalan
NRM	Non-relapse Mortality
OS	Overall Survival
PBC	Peripheral Blood Cells
PTCy	Post-transplantation Cyclophosphamide
pts	Patients
r	Relapsed
RI	Relapse Incidence
Rtx	Rituximab
SCD	Sickle Cell Disease
SMN	Secondary Malignancy
TBI	Total Body Irradiation
Treo	Treosulfan
TT	Thiotepa
VCN	Vector Copy Number
VHR	Very High Risk
VOD	Veno-Occlusive Disease

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Annual Meeting of the American Society of Hematology

San Diego, CA; 7 - 10 December 2024

Factor VIII Expression from a Novel F8 Transgene through a Lentiviral Vector Transduced CD34+ Autologous Hematopoietic Stem Cells for Gene Therapy of Severe Hemophilia A: Final Results from a Phase 1 Clinical Trial

#1052
Oral presentation

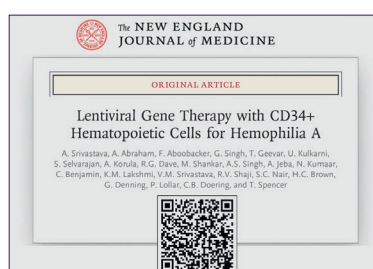
Alok Srivastava, MD, FRACP, FRCPA, FRCP^{1,2}, Aby Abraham, MD, DM¹, Fouzia N Aboobacker, DNB, DM³, Gurbind Singh, PhD⁴, Tulasi Geevar, MD⁵, Uday Kulkarni, MD, DM¹, Sushil Selvarajan, MD, DM⁶, Anu Korula, MD, DM, MRCP⁷, Rutvi Gautam Dave, MD⁸, Mohanashankar A M, MSc⁹, Abraham Sunder Singh, RN¹⁰, Anbu Jeba, RN⁶, Navien Kumaar, MSc⁶, Christopher Benjamin, B Pharm, Dip Clin Pharm⁶, Kavitha M Lakshmi, MSc⁶, Shaji R Velayudhan, PhD^{6,11}, Sukesh C Nair, MD¹², Gabriela Denning, PhD¹³, Pete Lollar, MD¹⁴, Christopher B Doering, PhD¹⁵ and H. Trent Spencer, PhD¹⁵

Affiliations: ¹Department of Haematology, Christian Medical College Ranipet Campus, Ranipet, India; ²Unit of inStem Bengaluru, Centre for Stem Cell Research, Vellore, India; ³Department of Haematology, Christian Medical College Vellore, Vellore, India; ⁴Centre for Stem Cell Research (a Unit of inStem, Bengaluru), Vellore, India; ⁵Christian Medical College, Vellore, Vellore, Tamil Nadu, India; ⁶Department of Haematology, Christian Medical College, Vellore, India; ⁷Department of Haematology, Christian Medical College & Hospital, Vellore, India; ⁸Christian Medical College, Vellore, Vellore, India; ⁹Centre for Stem Cell Research (a unit of inStem, Bengaluru), Vellore, India; ¹⁰Department of Haematology, Christian Medical College Vellore, Ranipet Campus, Ranipet, Tamil Nadu, India; ¹¹Centre for Stem Cell Research (a unit of inStem, Bengaluru), Vellore, Tamil Nadu, India; ¹²Department of Transfusion Medicine and Immunohematology, Christian Medical College, Vellore, India; ¹³Expression Therapeutics, Inc., Tucker, GA; ¹⁴Emory University, Children's Center, Atlanta, GA; ¹⁵Department of Pediatrics, Aflac Cancer and Blood Disorders Center, Emory University and Children's Healthcare of Atlanta, Atlanta, GA

Study design	Single arm, open label, phase I	Aims	Safety, feasibility and efficacy of lentiviral vector transduced autologous hematopoietic stem cell based gene therapy of hemophilia A
Procedure	HSCT with autologous CD34 ⁺ PBC transduced ex-vivo with CD68-ET3-LV vector		
Endpoints safety	100 d survival FVIII inhibitors	Endpoints efficacy	FVIII activity in plasma annualized bleeding rate
Patients	5 (all ♂)	Age range	22 - 41 y
Disease	Severe hemophilia A		
Conditioning*	Treo 14 g/m ² /d (d-5 to -3), Flu 30 mg/m ² /d (d-5 to -2)		
Results	<ul style="list-style-type: none"> • HSCT procedure well tolerated, no infusion related AEs. • Engraftment: 10-12 d (neutrophils), 12-15 d (platelets). • Last exogenous rFVIII replacement: 11-20 d post HSCT. • Positive correlation between plasma FVIII levels and VCN. 		
Conclusions*	<ul style="list-style-type: none"> • Safety and feasibility of the treatment established. • Regimen related toxicities mild and well tolerated. • Highly significant and sustained expression of FVIII activity. • Excellent clinical response in all patients. 		

*Information differing from abstract was based on presentation during conference.

This study has been published in the New England Journal of Medicine and can be accessed using the QR code below:



<https://is.gd/Paper202882>

Analysis of Outcomes after Second Allogeneic Stem Cell Transplant in Relapsed Acute Myeloid Leukaemia in Children: A Study from the EBMT Pediatric Diseases Working Party

#2182

Oral presentation

Nimrod Buchbinder, MD¹, Victor Michel, MD¹, Mouad Abouqateb, MSc, MPH², Arnaud Dalissier, BSc², Katharina Kleinschmidt, MD³, Marc Ansari, MD, PhD⁴, Franco Locatelli, MD⁵, Alexey Maschan, MD, DSc⁶, Robert Wynn Sr., MD⁷, Franca Fagioli, MD, PhD⁸, Marco Zecca, MD⁹, Charlotte Jubert, MD¹⁰, Marc Bierings, MD, PhD¹¹, Petr Sedlacek, MD, PhD¹², Alexander Kulagin, MD, PhD¹³, Marta González Vicent, MD¹⁴, Alessandra Biffi, MD, PhD¹⁵, Gerard Michel, MD, PhD¹⁶, Oana Mirici-Danica, MD, PhD¹⁷, Wolfgang Holter, MD¹⁸, Jacques-Emmanuel Galimard, PhD², Pascale Schneider, MD, PhD¹⁹ and Krzysztof Kalwak, MD, PhD²⁰

Affiliations: ¹Department of Pediatric Hematology and Oncology, Rouen University Hospital, Rouen, France; ²EBMT Paris Study Unit, Saint Antoine Hospital, INSERM UMR-S ⁹³⁸, Sorbonne University, Paris, France; ³Department of Pediatric Oncology, Hematology and Stem Cell Transplantation, University Children's Hospital Regensburg, Regensburg, Germany; ⁴Department of Pediatrics, Onco-Hematology Unit, Geneva University Hospital, Geneva, Switzerland; ⁵IRCCS Ospedale Pediatrico Bambino Gesù, Rome, Italy; ⁶Dmitriy Rogachev National Medical Center of Pediatric Hematology, Oncology and Immunology, Moscow, Russian Federation; ⁷Royal Manchester Children's Hospital, MANCHESTER, United Kingdom; ⁸Pediatric Onco-Hematology, Stem Cell Transplantation and Cellular Therapy Division, Regina Margherita Children's Hospital, University of Turin, Turin, Italy; ⁹Pediatric Hematology-Oncology, Fondazione IRCCS Policlinico San Matteo, Pavia, Italy; ¹⁰Pediatric BMT Unit, Bordeaux University Hospital, Bordeaux, France; ¹¹Princess Maxima Center/ University Hospital for Children (WKZ), Stem cell transplantation, Utrecht, Netherlands; ¹²University Hospital Motol, Department of Paediatric Haematology and Oncology, Prague, Czech Republic; ¹³RM Gorbacheva Research Institute, Pavlov University, Saint-Petersburg, Russian Federation; ¹⁴Pediatric Hemato-Oncology, Niño Jesús University Children's Hospital, Madrid, Spain; ¹⁵Padua University Hospital, Pediatric Hematology, Oncology and Stem Cell Transplant Division, Padova, Italy; ¹⁶CHU de Marseille Hôpital de la Timone Enfants, Marseille, France; ¹⁷Bristol Royal Hospital for Children Dept. of Paediatric Haematology/Oncology/BMT, Bristol, United Kingdom; ¹⁸St. Anna Children's Hospital, Vienna, Vienna, AUT; ¹⁹Pediatric Hematology, Immunology, Oncology and Stem Cells Transplantation, Rouen University Hospital Charles Nicolle CHU Rouen, Rouen, France; ²⁰Department of Pediatric Hematology, Oncology and BMT, Wrocław Medical University, Wrocław, Poland

Study design	Retrospective EBMT registry analysis	Aim	Outcomes of pts <18y at the time of HSCT2 with relapsed AML after HSCT1 who underwent HSCT2 between 2000 - 2022
Primary endpoint	LFS	Secondary endpoints*	OS, NRM, RI
Patients	345	Median Age (range)	10.4 y (5.2 – 14.5)
Disease	Relapsed AML after HSCT (n=265 in CR)		
Conditioning*	mostly MAC (73.3%); TBI 38.9%, Bu 19.5%, Treo 15.4%, other (Flu, Mel, TT) 26.2%		
Results*	<ul style="list-style-type: none"> • 3 y Survival: LFS 30.2%, OS 37.5%, GRFS 20.7% • 3 y NRM 19.1 • 3 y RI 50.7% • aGVHD 34.8% (grade II-IV), 13.2% (grade III-IV) • 3 y cGVHD 20.8% (all), 11.9% (extensive) • More recent period of HSCT significantly associated with better survival and relapse outcome. 		
Conclusions	<ul style="list-style-type: none"> • Second HSCT for post-HSCT relapsed AML is feasible, resulting in prolonged LFS in ~30% of pts. • RI and NRM remain the main problems. • Delay between HSCT1 and relapse >6 mo and achieving CR2 before HSCT2 predictive for better outcome. 		

*Numbers differing from abstract were based on poster presented during conference.



Total Body Irradiation Versus Chemotherapy Conditioning before Allogeneic Hematopoietic Stem Cell Transplantation for Pediatric Acute Lymphoblastic Leukemia Patients Aged 2 to 4 Years: A Retrospective Study of the EBMT Pediatric Diseases Working Party

#3540

Poster presentation

Anna Eichinger, MD¹, Zofia Szmít, MD, PhD², Katharina Kleinschmidt, MD³, Mouad Abouqateb, MSc, MPH⁴, Marc Ansari, MD, PhD⁵, Peter Bader⁶, Adriana Balduzzi, MD^{7,8}, Marc Bierings, MD, PhD⁹, Arnaud Dalissier, BSc⁴, Jean-Hugues Dalle, MD, PhD¹⁰, Cristina Díaz De Heredia¹¹, Franca Fagioli, MD, PhD¹², Maura Faraci, MD¹³, Jacques-Emmanuel Galimard, PhD⁴, Brenda Gibson, MD¹⁴, Peter Lang, MD¹⁵, Oana Mirci-Danaric, MD, PhD¹⁶, Richard Mitchell, MBBS¹⁷, Christina Peters¹⁸, Kanchan Rao¹⁹, Sampaa Ryhänen, MD, PhD²⁰, Martin G. Sauer, MD²¹, Petr Sedlacek, MD, PhD²², Jan Styczynski, MD, PhD²³, Selim Corbacioglu, MD³ and Krzysztof Kalwak, MD, PhD²⁴

Affiliations: ¹Department of Pediatrics, Dr. von Hauner Children's Hospital, University Hospital, LMU, Munich, Germany; ²Department of Pediatric Hematology, Oncology and BMT, Wrocław Medical University, Wrocław, Poland; ³Department of Pediatric Oncology, Hematology and Stem Cell Transplantation, University Children's Hospital Regensburg, Regensburg, Germany; ⁴EBMT Paris Study Unit, Saint Antoine Hospital, INSERM UMR-S 938 Sorbonne University, Paris, France; ⁵Department of Pediatrics, Onco-Hematology Unit, Geneva University Hospital, Geneva, Switzerland; ⁶Department of Pediatrics, Division for Stem Cell Transplantation and Immunology, Goethe University Frankfurt, University Hospital, Frankfurt am Main, Germany; ⁷Fondazione IRCCS San Gerardo dei Tintori, Pediatric Hematopoietic Stem Cell Transplant Unit, Monza, Italy; ⁸University of Milano-Bicocca, Monza, Italy; ⁹Princess Maxima Center/ University Hospital for Children (WKZ), Stem cell transplantation, Utrecht, Netherlands; ¹⁰Hôpital Robert Debre, Pediatric Hematology and Immunology Department, GHU AP-HP Nord – Université Paris Cité, Paris, France; ¹¹Department of Pediatric Hematology and Oncology, Hospital Universitari Vall d'Hebron, Barcelona, Spain; ¹²Ospedale Infantile Regina Margherita, Torino, Italy; ¹³HSCT Unit, IRCCS Istituto Giannina Gaslini, Genova, Italy; ¹⁴Department of Paediatric Haematology, Royal Hospital for Sick Children, Glasgow, United Kingdom; ¹⁵Department of Hematology and Oncology, University Children's Hospital, Eberhard Karls University Tuebingen, Tuebingen, Germany; ¹⁶Bristol Royal Hospital for Children Dept. of Paediatric Haematology/Oncology/BMT, Bristol, United Kingdom; ¹⁷Kids Cancer Centre, Sydney Children's Hospital, Randwick, Australia; ¹⁸Department of Pediatrics and Adolescent Medicine, Medical University of Vienna, St. Anna Children's Hospital, St. Anna Children's Hospital, Vienna, Austria; ¹⁹Great Ormond Street Hospital for Children NHS Foundation Trust, London, United Kingdom; ²⁰Pediatric Research Center, Children's Hospital, University of Helsinki and Helsinki University Hospital, Helsinki, Finland; ²¹Hannover Medical University, Hannover, Germany; ²²University Hospital Motol, Department of Paediatric Haematology and Oncology, Prague, Czech Republic; ²³University Hospital, Collegium Medicum UMK Pediatric Hematology and Oncology, Bydgoszcz, Poland; ²⁴Department of Pediatric Hematology, Oncology and BMT, Wrocław Medical University, Wrocław, Poland

Study design	Study design Retrospective analysis	Aims	Outcomes of TBI- vs. CTx-based conditioning in children of 2 - 4 y
Endpoints	Primary: SMN; secondary: key alloHSCT outcome parameters		
Patients	282	Median Age	2.8 y (CTx) 3.3 y (TBI)
Disease	ALL		
Conditioning	TBI	CTx Bu 86.4%, Treo 10.1%, Flu/Mel 3.3%	p
Results*	n SMN 10 y OS 10 y RI 10 y LFS GvHD	163 n=15 68.4% 22.1% 64.8%	119 n=5 50.7% 41.5% 44.0%
No significant differences between groups			
Conclusions	<ul style="list-style-type: none"> TBI conditioning leads to less RI and better EFS and OS in pediatric ALL pts between 2 and 4 y of age. SMN (mostly thyroid carcinoma) were more commonly seen with TBI, with incidence in the expected range. TBI should be offered to VHR ALL pts >2 y, with thorough follow-up for early detection of SMN. 		

*Information differing from abstract was based on poster presented during conference.



<https://is.gd/Paper198741>

Treosulfan Vs Busulfan As Part of Clofarabine Based Reduced Intensity Conditioning Regimen before Allotransplant for Myeloid Malignancies

#4882
Poster presentation

Laura Prin Felix¹, Maxime Jullien, MD², Amandine Le Bourgeois, MD², Alice Garnier, MD³, Pierre Peterlin², Sophie Vantyghe, MD², Aude-Marie Fourmont, MD², Thierry Guillaume, MD, PhD² and Patrice Chevallier, MD, PhD⁴

Affiliations: ¹Haematology, Nantes university hospital, NANTES, France; ²Hematology Clinic, Nantes University Hospital, Nantes, France; ³CHU Nantes Hôpital Hôtel Dieu Hématologie Clinique, Nantes, France; ⁴Hematology Department, Nantes University Hospital, Nantes, France

Study design	Monocentric retrospective	Aims	Clo/Treo RIC vs. Clo/Bu RIC regimen for myeloid malignancies																																								
Parameters assessed	Neutrophil/platelet recovery, OS, DFS, NRM, RI, a/cGvHD																																										
Patients	142	Median Age	62 y (Clo/Treo) 65 y (Clo/Bu)																																								
Disease	AML (n=95), other myeloid malignancies																																										
Conditioning	Clo/Treo Clo 30 mg/m ² /d (5 d) Treo 10 g/m ² /d (3 d) rabbit ATG 2.5 mg/kg/d (2 d)	Clo/Bu Clo 30 mg/m ² /d (5 d) Bu 3.2 mg/kg/d (2 d) rabbit ATG 2.5 mg/kg/d (1-2 d)	p																																								
Results	<table> <tr> <td>n</td><td>34</td><td>108</td><td></td></tr> <tr> <td>Neutrophil recovery</td><td>median 10 d</td><td>median 16 d</td><td><0.001</td></tr> <tr> <td>Platelet recovery</td><td>median 13 d</td><td>median 11 d</td><td>0.2</td></tr> <tr> <td>18 mo OS</td><td>79%</td><td>69%</td><td>0.3</td></tr> <tr> <td>18 mo DFS</td><td>70%</td><td>63%</td><td>0.4</td></tr> <tr> <td>18 mo NRM</td><td>15%</td><td>15%</td><td>>0.9</td></tr> <tr> <td>18 mo RI</td><td>15%</td><td>22%</td><td>0.3</td></tr> <tr> <td>aGvHD (gr. II-IV / III-IV)</td><td>24% / 21%</td><td>18% / 13%</td><td>0.4 / 0.2</td></tr> <tr> <td>cGvHD (all / extensive)</td><td>56% / 18%</td><td>41% / 16%</td><td>0.06 / 0.8</td></tr> <tr> <td>Causes of death</td><td colspan="3">No significant differences between groups</td></tr> </table>			n	34	108		Neutrophil recovery	median 10 d	median 16 d	<0.001	Platelet recovery	median 13 d	median 11 d	0.2	18 mo OS	79%	69%	0.3	18 mo DFS	70%	63%	0.4	18 mo NRM	15%	15%	>0.9	18 mo RI	15%	22%	0.3	aGvHD (gr. II-IV / III-IV)	24% / 21%	18% / 13%	0.4 / 0.2	cGvHD (all / extensive)	56% / 18%	41% / 16%	0.06 / 0.8	Causes of death	No significant differences between groups		
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Causes of death	No significant differences between groups																																										
Conclusions	<ul style="list-style-type: none"> Clo/Treo provides similar outcome compared to Clo/Bu in adults with myeloid malignancies with, however, faster neutrophil recovery. In AML patients, Clo/Treo is associated with significantly lower RI but higher incidence of GvHD related deaths, suggesting a potential need for reinforced GvHD prophylaxis. 																																										



TANDEM MEETINGS

Transplantation & Cellular Therapy Meeting of ASTCT and CIBMTR

Honolulu, HI; 12 - 15 February 2025

Thiotepa, Treosulfan and Fludarabine Conditioning for Haploidentical Stem Cell Transplant with Post Transplant Cyclophosphamide for Thalassemia and Sickle Cell Disease

ID 53
Oral presentation

Satya Prakash Yadav, MBBS DCH DNB^{1,2}, Dhwanee Thakkar¹, Rachit Khandelwal, MD³, Pallavi Wadhawan⁴, Richa Richa⁴ and Neha Rastogi⁵

Affiliations: ¹Pediatric Hematology Oncology & BMT, Medanta The Medicity, Gurgaon, Haryana, India, ²Pediatric Hematology Oncology & Bone Marrow Transplantation, Medanta The Medicity Hospital, Gurgaon, Haryana, India, ³Medanta The Medicity, Gurgaon, Haryana, India, ⁴Medanta The Medicity, Gurgaon, India, ⁵Pediatric Hematology Oncology & BMT, Medanta The Medicity, Gurgaon, India

Study design	Retrospective analysis	Aim	Evaluate outcomes of FTT conditioning in haploidentical HSCT with PTCy in HBP pts
Parameters assessed	Engraftment, GvHD, viral reactivation, survival rates		
Patients	42	Median Age	26 y (1-16)
Disease	Thalassemia (n=31), SCD (n=11)		
Conditioning	FTT: TT 8 mg/kg, Treo 14 g/m ² , Flu 40 mg/m ² , Rtx 100 mg/m ² , rabbit ATG 2.5 mg/kg PTCy		
Results	Engraftment: Neutrophils: median 15 d (14-19); Platelets: median 16 d (14-23) GvHD: aGvHD grade II-IV: 17%; cGvHD: 21% Viral reactivation: 60% VOD: 0% EFS: Thalassemia 84%, SCD 91% OS: Thalassemia 94%, SCD 100%		
Conclusions	• FTT conditioning is safe and effective for haploHSCT with PTCy for thalassemia and SCD.		



Comparison of Busulfan and Treosulfan-Based High-Dose Chemotherapy Regimens for Autologous Stem Cell Transplantation in High-Risk Neuroblastoma

ID 251
Poster presentation

Kyung-Nam Koh¹, Ho Joon Im, MD & PhD², Hyery Kim³ and Sung Han Kang³

Affiliations: ¹Pediatrics, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea, Republic of South, ²Pediatrics, Asan Medical Center Children's Hospital, Seoul, Republic of Korea, ³Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea, Republic of South

Study design	Single center retrospective analysis	Aim	Compare efficacy and toxicity profiles of Bu- vs Treo-based HDCT regimens in first ASCT for HR NB
Parameters assessed	OS, EFS, hospitalization duration, neutrophil engraftment, mucositis, neutropenic fever, pulmonary hypertension, CKD, hepatic VOD		
Patients	34	Median Age	Not specified
Disease	HR NB		
Conditioning	Bu/Mel		Treo/Mel
Results			
n	20		14
5 y OS	75%		100%
5 y EFS	65%		70.1%
Hospitalization duration	25 d (21-42)		23 d (21-26)
Neutrophil engraftment	10 d (8-12)		10 d (9-11)
Mucositis	19/20 pts		10/14 pts
Neutropenic fever	55%		58%
Pulmonary hypertension	20%		0%
CKD	15%		0%
Hepatic VOD	10%		0%
Conclusions	• Treo may reduce treatment-related toxicities compared to Bu: reduced risk of pulmonary hypertension, CKD, and hepatic VOD with Treo.		



Trecondi® 1 g / 5 g powder for solution for infusion

Qualitative and quantitative composition: One vial Trecondi 1 g (5 g) powder for solution for infusion contains 1 g (5 g) of treosulfan. When reconstituted, 1 mL of the solution for infusion contains 50 mg treosulfan. **Therapeutic indications:** Treosulfan in combination with fludarabine is indicated as part of conditioning treatment prior to allogeneic haematopoietic stem cell transplantation (alloHSCT) in adult patients and in paediatric patients older than one month with malignant and non-malignant diseases. **Posology and method of administration:** Administration should be supervised by a physician experienced in conditioning treatment followed by alloHSCT. *Adults with malignant disease:* Treosulfan is given in combination with fludarabine. Treosulfan 10 g/m² body surface area (BSA) per day as a two-hour intravenous infusion, given on three consecutive days (day -4, -3, -2) before stem cell infusion (day 0). The total treosulfan dose is 30 g/m²; Treosulfan should be administered before fludarabine. *Adults with non malignant disease:* Treosulfan is given in combination with fludarabine with or without thiotepe. Treosulfan 14 g/m² body surface area (BSA) per day as a two-hour intravenous infusion, given on three consecutive days (day -6, -5, -4) before stem cell infusion (day 0). The total treosulfan dose is 42 g/m²; Treosulfan should be administered before fludarabine. *Paediatric population:* Treosulfan is given in combination with fludarabine, with or without thiotepe. **Contraindications:** Hypersensitivity to the active substance; active non-controlled infectious disease; severe concomitant cardiac, lung, liver, and renal impairment; Fanconi anaemia and other DNA breakage repair disorders; pregnancy; administration of live vaccine. **Undesirable effects:** *Infections, infestations:* Very commonly infections (bacterial, viral, fungal). Commonly sepsis. Septic shock. *Neoplasms:* Treatment related second malignancy. *Blood, lymphatic system:* Very commonly myelosuppression, pancytopenia, febrile neutropenia. *Immune system:* Commonly hypersensitivity. *Metabolism and nutrition:* Commonly decreased appetite. Uncommonly glucose tolerance impaired including hyperglycaemia and hypoglycaemia. *Acidosis, alkalosis, electrolyte imbalance, hypomagnesaemia.* *Psychiatric:* Commonly insomnia. Uncommonly confusional state. *Nervous system:* Commonly headache, dizziness. Uncommonly intracranial haemorrhage, peripheral sensory neuropathy. Encephalopathy, intracranial haemorrhage, extrapyramidal disorder, syncope, paraesthesia, seizure. *Eye:* Dry eye, conjunctival haemorrhage. *Ear:* Uncommonly vertigo. *Cardiac:* Commonly cardiac arrhythmias (e.g. atrial fibrillation, sinus arrhythmia). Cardiac arrest, cardiac failure, myocardial infarction, pericardial effusion. *Vascular:* Commonly hypertension, hypotension, flushing. Uncommon haematoma. Embolism, capillary leak syndrome. *Respiratory, thoracic, mediastinal:* Commonly dyspnoea, epistaxis, oropharyngeal pain. Uncommonly pneumonia, pleural effusion, pharyngeal or laryngeal inflammation, hiccups. Laryngeal pain, cough, dysphonia, hypoxia. *Gastrointestinal:* Very commonly stomatitis/mucositis, diarrhoea, nausea, vomiting, abdominal pain. Commonly oral pain, gastritis, dyspepsia, constipation, dysphagia, oesophageal or gastrointestinal pain, anal inflammation. Uncommonly mouth haemorrhage, abdominal distension, dry mouth. Gastric haemorrhage, neutropenic colitis, oesophagitis, proctitis, gingival pain. *Hepatobiliary:* Very commonly hepatotoxicity. Uncommonly veno-occlusive liver disease. Hepatomegaly. *Skin, subcutaneous tissue:* Very commonly pruritus, alopecia. Commonly (maculo-papular) rash, purpura, erythema, urticaria, palmar plantar erythrodysesthesia syndrome, dermatitis exfoliative, pain of skin, skin hyperpigmentation. Uncommonly erythema multiforme, dermatitis acneiform, dry skin. Skin necrosis or ulcer, dermatitis, dermatitis bullous, dermatitis diaper. *Musculoskeletal and connective tissue:* Commonly pain in extremity, back pain, bone pain, arthralgia. Uncommonly myalgia. *Renal, urinary:* Commonly acute kidney injury, haematuria. Uncommonly urinary tract pain. Renal failure, haemorrhagic or noninfective cystitis, dysuria. *Reproductive system:* Scrotal erythema, penile pain. *General, administration site:* Very commonly asthenic conditions (fatigue, asthenia, lethargy), pyrexia. Commonly oedema, chills. Uncommonly non cardiac chest pain, pain, face oedema. *Investigations:* Very commonly blood bilirubin increased, ALT increased. Commonly AST increased, γ GT increased, C-reactive protein increased, weight decreased, weight increased. Uncommonly blood alkaline phosphatase increased. Blood lactate dehydrogenase (LDH) increased. **Legal classification:** POM (prescription only medicine). **Marketing authorisation holder:** medac GmbH Theaterstraße 6; 22880 Wedel, Germany. **Date of revision of text:** 11/2023 Trecondi has been authorised in all countries of the EU as well as in Australia (Link medical Products), Belarus, Canada (Medexus Pharmaceuticals Inc.), Iceland, Kazakhstan, Norway, Liechtenstein, Russia, Switzerland (Ideogen AG), United Kingdom, Ukraine

 **medac**

medac GmbH
Theaterstr. 6 | 22880 Wedel
Germany