



**ICT 2023**

28th International  
Congress on Thrombosis

***Diagnosis and clinical practice.***

***The role of registries and the sharing of experience***

***María Eva Mingot Castellano, PhD MD***



## Declaration of Conflict Of Interest

I have no potential conflict of interest to report

I have the following potential conflict(s) of interest to report

- **Advisory board:** Amgen, Boehringer Ingelheim, Grifols, Novartis, Novo Nordisk, Sanofi, Sobi, Shiomis, Takeda
- **Consultant:** Member of Scientific Committee of SEHH, Member of Director Committee of CAT  
Member of Director Committee of GEPTI, Member of Director Committee of REPTT-GEA
- **Speaker bureau:** Amgen, Boehringer Ingelheim, Grifols, Novartis, Novo Nordisk, Sanofi, Shiomis, Sobi, Takeda

# Why are registries relevant in TTP?

- Low incidence of iTTP, much of the knowledge come from some clinical trials and data obtained from “real word evidence”<sup>1-4</sup>.
- The Oklahoma TTP registry, led by JN George, has been the first that have provided new perspectives on the definition and diagnoses of these syndromes as well as their outcomes<sup>1,5</sup>

1. Scully M, et al. *N Engl J Med* 2019;380:335–46.
2. Peyvandi F, et al. *Blood Adv* 2021;5(8):2137–41.
3. Hie M, et al. *Blood* 2014;124:204–10.
4. Rock GA, et al. *N Engl J Med* 1991;325(6):393–7.
5. George JN, et al. *Semin Hematol.*2004; 41(1):60–7.



# Why are registries relevant in TTP?

- Knowledge
- Homogenize treatment
- Homogenize monitoring.
- Evaluation cost/effectiveness to implement new diagnosis techniques and treatment strategies.



# Spanish registry of TTP



2004-2007

Comparative Study > Br J Haematol. 2008 Oct;143(1):39-45.  
doi: 10.1111/j.1365-2141.2008.07292.x. Epub 2008 Jul 14.

**Methylene blue-photoinactivated plasma versus quarantine fresh frozen plasma in thrombotic thrombocytopenic purpura: a multicentric, prospective cohort study**

Julio del Río-Garma <sup>1</sup>, Alberto Alvarez-Larrán, Clara Martínez, Josep Muncunill, Dolores Castellà, Javier de la Rubia, Concepción Zamora, Mercedes Corral, Aurora Viejo, Francisco Peña, Pilar Rodríguez-Vicente, Eric Contreras, Cristina Arbona, Consuelo Ramirez, José A Garcia-Erce, Adrián Alegre, José Mateo, Arturo Pereira

Affiliations + expand  
PMID: 18637799 DOI: 10.1111/j.1365-2141.2008.07292.x

2007-2010

**REGISTRO ESPAÑOL DE LA PURPURA TROMBÓTICA TROMBOCITOPÉNICA Y DEL SÍNDROME HEMOLÍTICO UREMICO DEL ADULTO**

ESTUDIO PROSPECTIVO INTEGRAL (EPIDEMIOLÓGICO, CLÍNICO-BIOLÓGICO, GENÉTICO Y TERAPÉUTICO), ABIERTO, ACERCA DE AMBOS TIPOS DE ENTIDADES COORDINADO POR EL GRUPO ESPAÑOL DE AFERESIS (GEA)

**INVESTIGADORES PRINCIPALES:**

Julio del Río Garma, Servicio de Hematología, Complejo Hospitalario de Orense  
Alberto Alvarez Larrán, Servicio Hematología, Hospital del Mar, Barcelona  
Arturo Pereira Saavedra, Servicio de Hemostasia y Hemoterapia, Hospital Clínic, Barcelona  
Manuel Hernández Jodra, Servicio de Transfusión, Hospital Ramón y Cajal, Madrid.

2011-2014

Dr. Arturo Pereira

WEBGTEPTT

Grupo de Trabajo para el Estudio de la PTT

PRESENTACION

El Grupo de Trabajo para el Estudio de la Púrpura Trombocitopénica Trombótica (PTT) se decada de 2000 a partir de la iniciativa de varios hematólogos españoles interesados en est inicios ha formado parte del Grupo Español de Aféresis, a su vez integrado en la Sociedad Sanguinea y en la Sociedad Española de Hematología y Hemoterapia.

A lo largo de estos años el Grupo de Estudio ha mantenido un Registro de casos de PT profesionales médicos de todo el país. La explotación científica del Registro se ha plasmado a congresos internacionales y publicaciones en revistas médicas de impacto sobre diva terapéuticos de la PTT. El Grupo de Estudio también ha contribuido a difundir el co enfermedad entre los médicos de nuestro país, tanto a través de los protocolos diagnósti ido elaborando el Grupo como de las actividades docentes que han organizado sus mien entre estas últimas es el Curso de Microangiopatías Trombóticas cuya última edición se celeb de noviembre de 2011.

2015-2018

**SETS** REGISTRO PTT

Presentación - Información - Entrar

Registro PTT. SETS

Entrar

Nombre de Usuario:

Contraseña:

Entrar

Recuperar Contraseña Registrar

**REGISTRO PTT**

2018-2020

**REPTT**

Nombre de usuario:

Contraseña:

Recordar [¿Recuperar contraseña?](#)

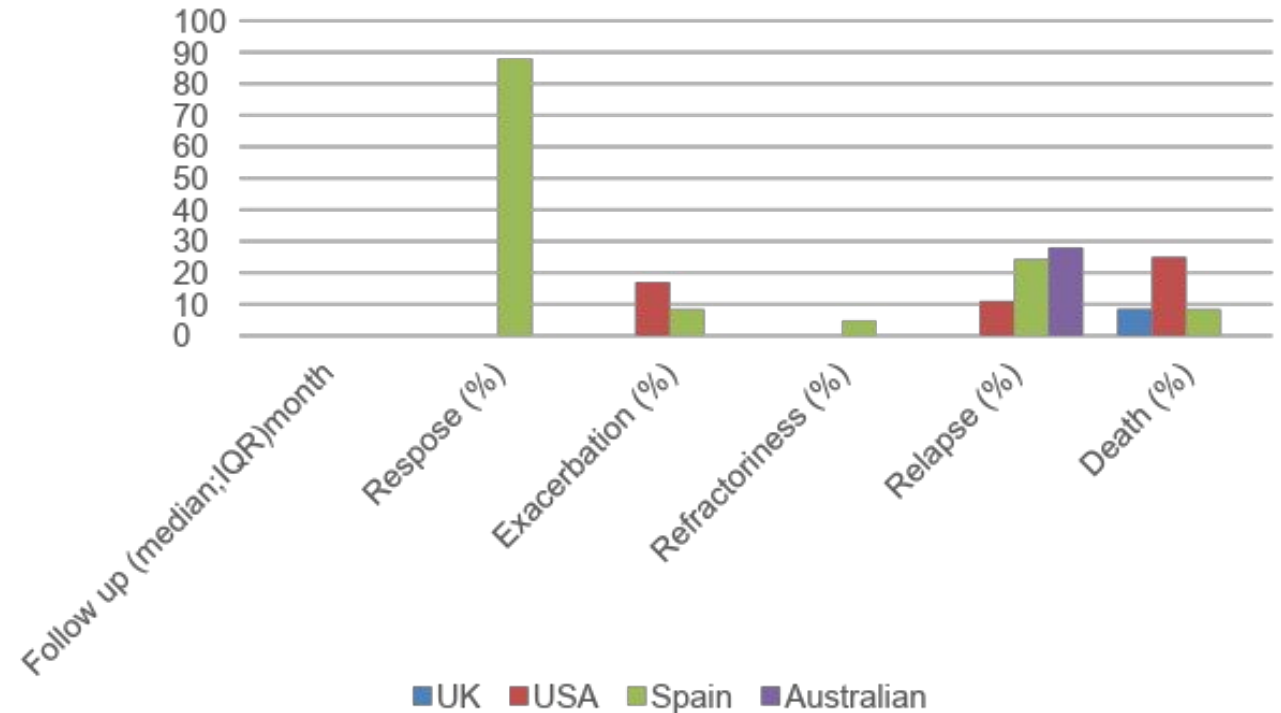
Email de contacto: registrotpt@gmail.com

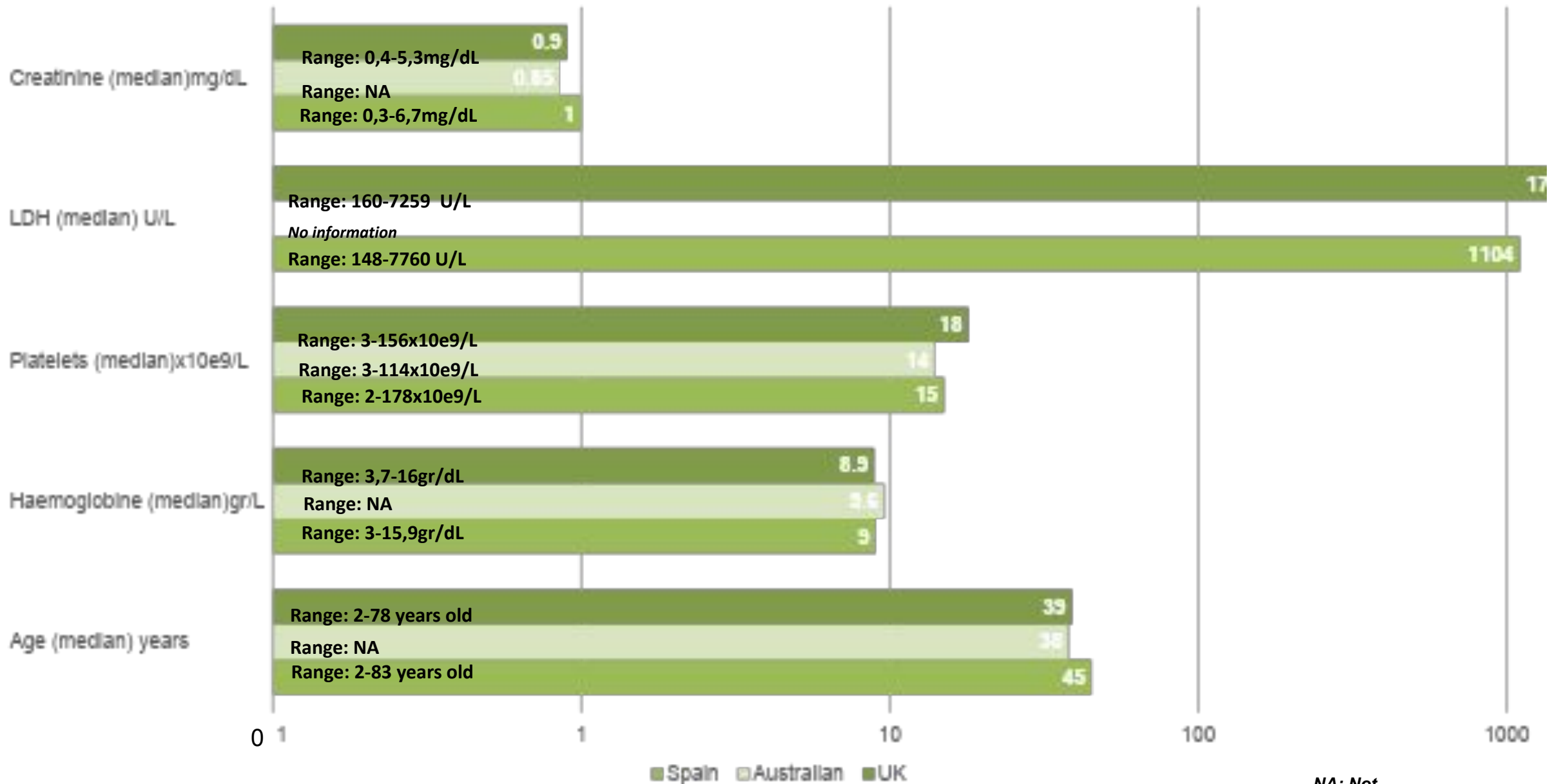
**GESDAT** Versión: 0.1

Entrar

# Spanish registry of TTP: Knowledge

- 42 hospitals covering 20 million inhabitants.
- Incidence was 2.67 (95 % CI 1.90–3.45) patients per million inhabitants per year.
- Prevalence 21.44 (95 % CI % 19.10–23.73) patients per million inhabitants.
- 7.4% mortality as a direct consequence of iTTP, >90% before or just receiving first PEX.
- 4.8% of the 193 treated patients were refractory to plasma exchange and corticosteroids.
- 26.4% suffered at least one exacerbation.

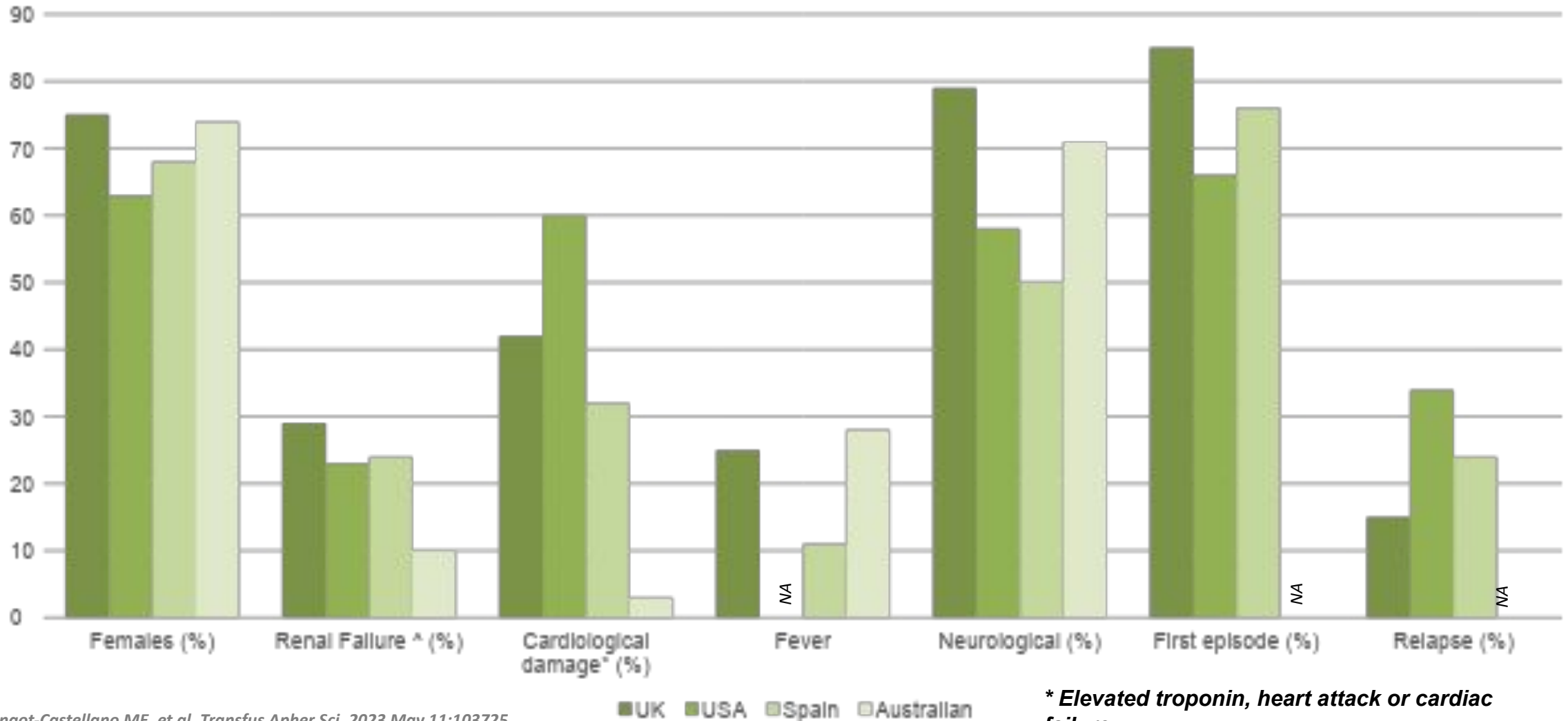




■ Spain ■ Australian ■ UK

NA: Not available  
**Median of variables**

# Spanish registry of TTP: Knowledge



# Spanish registry of TTP: Knowledge

National Group	Patients (Caplacizumab/historical cohort)	Response Rate (%)	Refractoriness vs Exacerbation (Caplacizumab/Historical cohort) (%)	PEX (caplacizumab vs Historical cohort) (Mean; SD) (Median;IQR)	Hospitalization (caplacizumab vs Historical cohort) (Mean; SD) (Median;IQR)	Follow up (caplacizumab vs Historical cohort) (Median;IQR) days	Relapse Rate (%)	Patients Caplacizumab +Rituximab (%)	Mortality (Caplacizumab/historical cohort) (%)
<b>Spanish</b>	77/78	95.7/94.8	6.5/14* vs 5.2/20.5*	12.4+/-11.8 vs 18.5+/-19	14.7+/-11.8 vs 21.9+/-19	216 (141-417) vs 214 (138-467)	16	84	3.9/7.7
<b>French</b>	114/180	97.8/87.8*	1.1/18* vs 3.4/44*	5 (5-7) vs 10 (6-16)	13 (9-19) vs 22 (15-30)	127 (47-200)	0,9	100	1.1/6.7*
<b>UK</b>	85/39	100/95	3.5 vs 2.4	7 (5 - 14) vs 7 (5 - 14)	14 (9 - 17) vs 12 (8 - 24)	80 (59-166)	7.1	87	5.9
<b>German</b>	60	93.3	3.3*/Non defined	11.8 (9.5-14.2)	18 (5-79)	108.5 (5-330)	3.3	78	1.7

IQR: Interquartile range; PEX: Plasma exchange

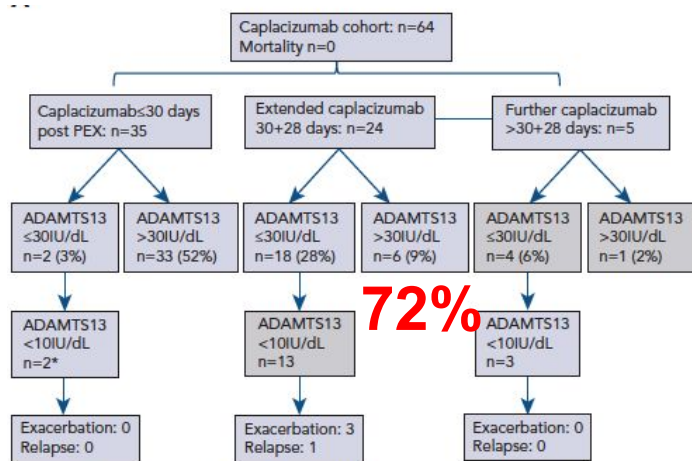
\* Significant p<0,005

1. *Izquierdo CP, et al. Blood Adv. 2022 Dec 27;6(24):6219-6227.*
2. *Coppo et al. Blood . 2021 Feb 11;137(6):733-742.*
3. *Dutt et al. Blood. 2021;137(13):1731-1740.*
4. *Volker et al. Blood Adv. 2020 Jul 14;4(13):3085-3092.*
5. *Mingot-Castellano ME, et al. Transfus Apher Sci. 2023 May 11:103725.*

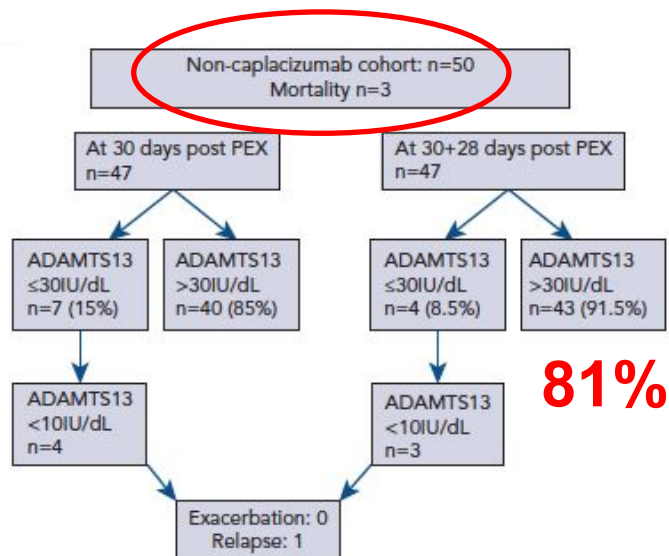
# Spanish registry of TTP: Knowledge

**Key questions:** Time to sample and To have information from all patients

**UK data ADAMTS13 > 30%**



\* early drug cessation due to widespread rash secondary to caplacizumab.  
 □ Indicates number of patients who remained severely deficient in ADAMTS13 activity at 30+28 days.



**Spanish Data ADAMTS13 >20%:**

- First 50 days.
- No difference in rate:  
 CPZ 53% vs no CPZ 59%  
 Median 20 days (14-44,3) vs 20 days (14-32,5)
- No difference with regard to rituximab use
- No difference with regard to use CPZ first 3 days and not use CPZ.

Waiting for acceptance: SEHH 2023

Title:

**DEVELOPMENT OF SPANISH-PORTUGUESE THROMBOTIC  
THROMBOCYTOPENIC PURPURA REGISTRY (REPTT): A  
STUDY PROPOSAL OF THE SPANISH SOCIETY OF  
HEMATOLOGY AND HEMOTHERAPY (SEHH) WITH THE  
PORTUGUESE SOCIETY OF HEMATOLOGY (SPH)**

Sponsor:

**Spanish Society of Haematology and Hemotherapy (SEHH)  
Portuguese Society of Haematology (SPH)**  
Calle Aravaca, 12, 1ºB 28040 Madrid  
Rua Augusto Macedo, Nº 12-D - Esc. 2. 1600-503 Lisboa  
Phone: +34 91 319 19 98 / + 351 217 120 778  
E-mail: [sehh@sehh.es](mailto:sehh@sehh.es) / [geral@sph.org.pt](mailto:geral@sph.org.pt)

Abbreviated title:

**SPANISH-PORTUGUESE THROMBOTIC THROMBOCYTOPENIC PURPURA  
REGISTRY (REPTT)**

Research Coordinators:

**Dr. María Eva Mingot Castellano**  
Unidad de Hematología. Hospital Universitario Virgen del Rocío.  
Sevilla, España.

Protocol version and date:

**Protocol code REPTT - 3.1 July 10<sup>th</sup>, 2021**

This document is confidential and proprietary to the Sponsor. Acceptance of this document constitutes agreement by the recipient that no unpublished information contained herein will be reproduced, published, or otherwise disseminated or disclosed without prior written approval of sponsor.

**First Ethical Committee that evaluated the study:**

**CEIc Hospital Universitario Virgen del Rocío.**

**Av. Manuel Siurot, S/n, 41013 Sevilla, Spain**

**Coordinating Investigators:**

**Dr. María Eva Mingot Castellano; M.D. Ph.D.**

**Unidad de Hematología. Hospital Universitario Virgen del Rocío. Sevilla, España.**

**E-Mail: [memingot@gmail.com](mailto:memingot@gmail.com)**

**Coordinating Investigator Centres:**

**Unidad de Hematología**

**Hospital Universitario Virgen del Rocío**

**Av. Manuel Siurot, S/n, 41013 Sevilla, Spain**

**Autonomous Community of the Coordinating Investigator**

**Andalucía**

**Clinical monitor:**

**MFAR Clinical Research S.L.**

**Monitor contact address:**

**MFAR Clinical Research S.L.**

**C/ Sinfonía Nº 28 Piso: 2º 1**

**28054 Madrid (Madrid), España**

**C/ Balmes 243, Escalera A 5º1ª**

**08006 Barcelona, España**

**Phone: +34 93 434 44 12**

**E-mail: [investigacion@mfar.net](mailto:investigacion@mfar.net)**

# Spanish and Portuguese registry of TTP: REPTT

## Hypothesis and Objectives

- REPTT aims to evaluate new scores and prognostic factors of morbidity and mortality in TTP patients.
- The final aim is to establish guidelines and recommendation to improve the global management, diagnosis and treatment of patients with TTP in real-life.

### **PRIMARY:**

To create a multicounty and multicentre registry with TTP cases from Spain and Portugal for gather information related to TTP:

- Incidence and prevalence, prognostic factors related to morbidity, mortality and treatment efficacy
- Information about the neurological and cardiovascular comorbidities associated with the disease.

# Spanish and Portuguese registry of TTP: REPTT

## Study Sample size

It is planned to include confirmed Thrombotic thrombocytopenic purpura (TTP) patients that fulfill eligibility criteria in Spain and Portugal.

The collection period will be at least **3 years** with the possibility of extending it. The inclusion will be performed in a competitive manner among the sites until achieving the minimum requirement of **300 patients**.

A sample of 300 consecutive patients in a rare disease is big enough to carry out the descriptive statistical calculations that are planned in the study in order to draw conclusions to respond to the different exploratory objectives that have been established. The precision level to estimate a population proportion in case of maximum dispersion ( $p=q=0.5$ ) would be **6.6% for a 95% confidence interval**.

## Population of Study

### Inclusion criteria:

- Patients with diagnosis of TTP according to International Consensus criteria<sup>20</sup> from centres in Spain and Portugal.
- Patients that voluntarily sign the informed consent. For subjects unable to provide informed consent, a fully recognized medical authority may be used according to local laws.
- Patients between 0 to 99 years old at the time of diagnosis.

Note: Decision was taken to treat the patient with a specific treatment prior and independently of patient inclusion in this non interventional study.

### Exclusion criteria:

- Inability to comply with study procedures and follow-up exams.
- Patients with any type of alteration that compromises their ability to grant written informed consent.
- Patients that do not consent to participate in the study and do not sign informed consent.
- Patients that do not meet the criteria previously mentioned for TTP.

# Spanish and Portuguese registry of TTP: REPTT

## Endpoints

### ADAMTS13 activity determinations:

- Number of ADAMTS13 activity determinations per episode
- Number of episodes diagnosed with ADAMTS13 activity determination (<10%)

### TTP treatment:

- Routine treatment of the patient (Type of drug, dose and frequency start and end dates of the treatment)

### TTP episodes and relapses:

- Total number of episodes (first and subsequent, refractory, exacerbation, with neurological and/or cardiac involvement)
- Time to recovery in terms of LDH levels, platelet counts, creatinine levels, troponin C (TnC) or troponin I (TnI) levels.
- Number of deaths associated to episodes, embolic and thrombotic events

### TTP-associated use of healthcare resources (per acute TTP episode):

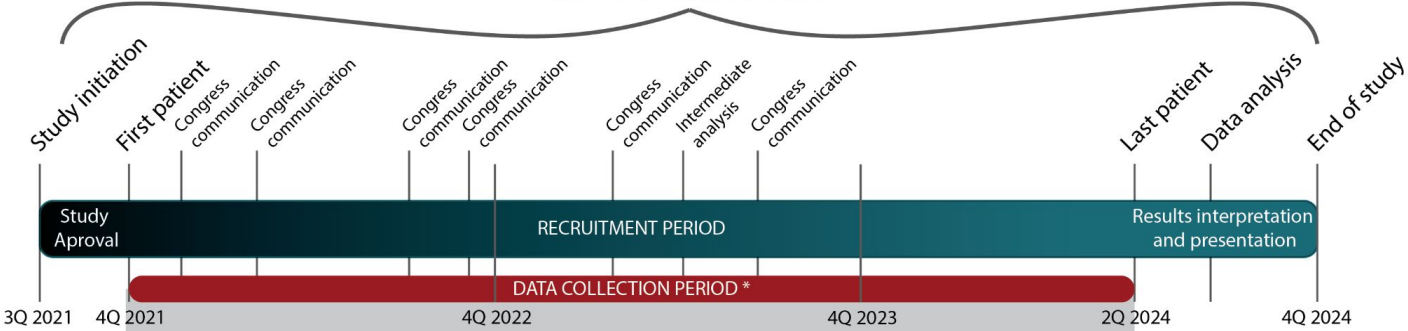
- Time to diagnose, admission, and discharge
- Number, volumen and type of plasma replacements per episode until remission and until discharge
- Proportion of patients who achieved clinical response, refractory to treatment, with clinically relevant TTP-related events, death (cause and date)

### Occurrence of adverse events (overall and treatment-related):

- Clinical symptoms and signs, complications associated with PEx per episode, need for rehabilitation, changes in work activity, neurological and physiological comorbidities
- Frequency and severity of serious adverse events (SAEs)

# Spanish and Portuguese registry of TTP: REPTT

## REPTT REGISTRY



- \* ENDPOINTS Collected at baseline:
- Date of inclusion visit
  - Age
  - Sex
  - Type of TTP diagnosed (aTTP or cTTP)
  - ECOG status
  - Personal history
  - First line relative's history
  - Cardiovascular risk factors and vascular diseases
  - Presence of cancer
  - Date of diagnosis of TTP (debut)
  - Date of last relapse of TTP
  - Cell blood count
  - Coagulation and biochemistry
  - Hepatic parameters
  - Complement system (immune)
  - PLASMIC score criteria
  - ADAMTS13 activity levels

- \* ENDPOINTS Collected at follow-up:
- Cardiovascular risk factors and vascular diseases
  - Cell blood count
  - Coagulation and biochemical parameters
  - Hepatic parameters
  - Complement system (immune parameters)
  - PLASMIC score criteria
  - ADAMTS13 activity levels
  - Antibodies against ADAMTS13
  - Genetic Alterations
  - Date of clinical response
  - Date of clinical remission
  - Exacerbations and /or refractoriness
  - Date of relapse
  - Full blood counts and other biochemical r
  - Relevant disease markers during daily PEx period
  - Daily records of PEx
  - Daily records of all therapies
  - Hospitalization, ICU admission
  - Complications and adverse events

**Incidence and prevalence, prognostic factors related to morbidity, mortality and treatment efficacy as well as information about the neurological and cardiovascular comorbidities associated with TTP**

### Timelines and Study Calendar

- Study activation: 2Q 2023
- 1st patient in: 4Q 2023
- Study close-out (end of recruitment): 2Q 2026
- End of study (including statistical analysis): 4Q 2026

### Study duration for each participant

Data from the patient's clinical history will be collected prospectively for at least 36 months or until patient withdrawal, lost to follow-up or exitus, whichever occurs first.

# Spanish and Portuguese registry of TTP: REPTT

<b>Date of inclusion visit in the REPTT Registry</b>	Date of patient's signature of the IC
<b>Age</b>	Patient's birth date
<b>Sex</b>	Patient's gender
<b>Type of PTT diagnosed: aTTP or cPTT</b>	aTTP: ADAMTS13 deficiency is an autoimmune disorder that leads to the production of antibodies that inhibit its activity cPTT: the ADAMTS13 deficit is due to mutations in the ADAMTS13 gene
<b>Eastern cooperative cancer group scale (ECOG)</b>	Eastern cooperative cancer group performance status at TTP diagnosis moment
<b>Personal history and first line relative's history of cardiovascular and neurological diseases</b>	Medical background conditions with special focus on previous history of renal, cardiovascular or neurological diseases, autoimmune disease or other relevant pathologies
<b>Cardiovascular risk factors and vascular diseases</b>	Cardiovascular risk factor including but not limited to hypertension, diabetes, smoking, obesity, high cholesterol and others Vascular disease including but not limited to arrhythmias or acute myocardial infarction. Vascular disease during pregnancy should also be considered Assessed at diagnosis and review one month after diagnosis, after 6 months and annual review afterwards
<b>Presence of cancer</b>	Type of cancer, date of diagnosis and remission date
<b>Date of diagnosis of TTP (debut)</b>	Date of first diagnosis
<b>Date of last relapse of TTP</b>	Date of last relapse
<b>Cell blood count</b>	Lab test results for the following parameters measured as: - Platelet count ( $10^9/L$ ) - Haemoglobin (g/dL) - Leukocytes ( $10^9/L$ ) Measured at diagnosis, at remission and in case of relapse, collect at relapse and response Update annually

# Spanish and Portuguese registry of TTP: REPTT

<b>Coagulation and biochemical parameters</b>	<ul style="list-style-type: none"><li>- Prothrombin time (PT/INR),</li><li>- Activated Partial Thromboplastin Time (aPTT/INR))</li><li>- Creatinine (mg/dL)</li><li>- LDH (IU/L)</li><li>- Haptoglobin (mg/dL)</li><li>- Troponin C or I (ng/mL)</li><li>- Bilirubin levels (direct and total) (<math>\mu\text{mol/L}</math> or mg/dL)</li><li>- Thyroid hormones (IU/L)</li><li>- Creatine Kinase Myocardial Band (CKMB) (IU/L)</li><li>- Glomerular filtration rate (mL/min)</li><li>- Urea (mmol/L)</li></ul> <p>Measured at diagnosis, at remission and in case of relapse, collect at relapse and response</p> <p><b>Update annually</b></p>
<b>Hepatic parameters</b>	<p>Lab test results for the following parameters measured as:</p> <ul style="list-style-type: none"><li>- AIALT, AST, GGT</li></ul> <p>Measured at diagnosis, at remission and in case of relapse, collect at relapse and response</p> <p><b>Update annually</b></p>
<b>Complement system (immune parameters)</b>	<p>Lab test results for the following parameters measured as:</p> <ul style="list-style-type: none"><li>- C3 (mg/dL), C4 (mg/dL), CH50 (mg/dL), C5a (mg/dL)</li></ul> <p>Measured at diagnosis, at remission and in case of relapse, collect at relapse and response</p> <p><b>Update annually</b></p>

# Spanish and Portuguese registry of TTP: REPTT

<b>PLASMIC score criteria</b>	PLASMIC score (0 to 7 points) measured at diagnosis, at remission and in case of relapse, collect at relapse and response. Update annually
<b>ADAMTS13 activity levels</b>	ADAMTS13 activity measurement with the reference method in each centre Results of test in % of normality Measured at least at admission and on regular time-points post-PEX
<b>Antibodies against ADAMTS13</b>	a) By mixture technique or b) By ELISA technique: TECHNOZYM® ADAMTS13 INH ELISA Kit: ADAMTS13 IgG concentration (U/mL) measured photometrically at 450nm
<b>ADAMTS13 antigen</b>	Technozym ADAMTS-13 Antigen ELISA. ASSAY RANGE 0 IU/mL – 1.0 IU/mL. DETECTION LIMIT 0.012 IU/mL
<b>Genetic Alterations</b>	Defined as
<b>Date of clinical response</b>	Date on which the patient achieves a favourable clinical response according to the criteria previously defined above and based on Scully et al description <sup>27</sup>
<b>Date of clinical remission</b>	Date on which the patient achieves clinical remission according to the criteria previously defined above and based on Scully et al. description <sup>27</sup>
<b>Exacerbations and /or refractoriness</b>	Presence of exacerbation and /or refractoriness in each TTP episode according to the criteria previously defined above and based on Scully et al. description <sup>27</sup>
<b>Date of relapse</b>	All relapses dates for each patient Relapse is defined according to the criteria previously defined above and based on Scully et al. description <sup>27</sup>
<b>Full blood counts and other biochemical relevant disease markers during daily PEX period</b>	Daily laboratory test results for the cell blood count, coagulation and biochemical parameters as well as the hepatic and immunological parameters previously described during daily PEX period
<b>Daily records of PEX</b>	Volume (mL/kg), intensity and type of plasma used during the plasma exchange treatment. Obtaining the following parameters prior to each PEX: platelet, LDH, creatinine and –only in some days–ADAMTS13 activity
<b>Daily records of all therapies</b>	List of treatments, date of start, dose, date of end Especial emphasis for immunosuppressant therapy
<b>Daily records of hospitalization, ICU admission</b>	Number of hospitalizations (admission and discharge dates, ICU admission date, number of days hospitalized, number of days in the ICU) Related deaths
<b>Daily records of any complications and adverse events</b>	Neurological, psychiatric and cardiac complications Treatment related complications, including complications and adverse effects to PEX therapy Systematic collection of SAES indicated by causality, severity, duration, relationship to product, action taken and outcome of the event

# ADAMTS13 studies validation

**IMPROVEMENT OF IMMUNOLOGIC AND MOLECULAR TECHNIQUES FOR THE DIAGNOSIS AND FOLLOW-UP OF PATIENTS WITH THROMBOTIC THROMBOCYTOPENIC PURPURA: A COLLABORATIVE STUDY PROPOSAL OF THE SPANISH APHERESIS GROUP (GEA) IN COLLABORATION WITH THE SPANISH FOUNDATION OF HEMATOLOGY AND HEMOTHERAPY (FEHH)**

The members of said Scientific Committee are:

- Dra. Cristina Pascual, University Hospital Gregorio Marañón (Madrid, Spain)
- Dr. Jorge Martínez Nieto, University Hospital Clínico San Carlos (Madrid, Spain)
- Dra. Marta Fernández Docampo, University Hospital Xestion Xanitaria A Coruña, (A Coruña, Spain)
- Dra. Maribel Díaz Ricart, University Hospital Clínic Barcelona (Barcelona, Spain)
- Dra. Inés Gómez Seguí, University Hospital La Fe (Valencia, Spain)
- Dra. Teresa Fidalgo, Centro Hospitalar Universitário de Coimbra (Coimbra, Portugal)
- Dr. Julio del Rio, University Hospital de Orense (Orense, Spain)
- Dra. María Eva Mingot Castellano, University Hospital Virgen del Rocio (Sevilla, Spain)
- Dr. Ramon Salinas, Hospital del Sagrat Cor; Universitat Internacional de Catalunya; Banc de Sang i Teixits de Catalunya, Barcelona, Spain)

Title:

**DEVELOPMENT OF SPANISH-PORTUGUESE THROMBOTIC  
THROMBOCYTOPENIC PURPURA REGISTRY (REPTT): A  
STUDY PROPOSAL OF THE SPANISH SOCIETY OF  
HEMATOLOGY AND HEMOTHERAPY (SEHH) WITH THE  
PORTUGUESE SOCIETY OF HEMATOLOGY (SPH)**

Sponsor:

**Spanish Society of Haematology and Hemotherapy (SEHH)  
Portuguese Society of Haematology (SPH)**  
Calle Aravaca, 12, 1ºB 28040 Madrid  
Rua Augusto Macedo, Nº 12-D - Esc. 2. 1600-503 Lisboa  
Phone: +34 91 319 19 98 / + 351 217 120 778  
E-mail: [sehh@sehh.es](mailto:sehh@sehh.es) / [geral@sph.org.pt](mailto:geral@sph.org.pt)

Abbreviated title:

**SPANISH-PORTUGUESE THROMBOTIC THROMBOCYTOPENIC PURPURA  
REGISTRY (REPTT)**

Research Coordinators:

**Dr. María Eva Mingot Castellano**  
Unidad de Hematología. Hospital Universitario Virgen del Rocío.  
Sevilla, España.

Protocol version and date:

**Protocol code REPTT - 3.1 July 10<sup>th</sup>, 2021**

This document is confidential and proprietary to the Sponsor. Acceptance of this document constitutes agreement by the recipient that no unpublished information contained herein will be reproduced, published, or otherwise disseminated or disclosed without prior written approval of sponsor.

## María Eva Mingot Castellano

[mariae.mingot.sspa@juntadeandalucia.es](mailto:mariae.mingot.sspa@juntadeandalucia.es)

- Cristina Pascual Izquierdo
- Ines Gómez Seguí
- Jose Pedro Carda