



**Incidenza e fattori di rischio degli eventi emorragici severi nella  
trombocitopenia immune primaria pediatrica:  
risultati di uno studio multicentrico su 3126 pazienti italiani (2010-2024)**

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NAZIONALE  
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**ROMA, 22-24 Settembre 2025**

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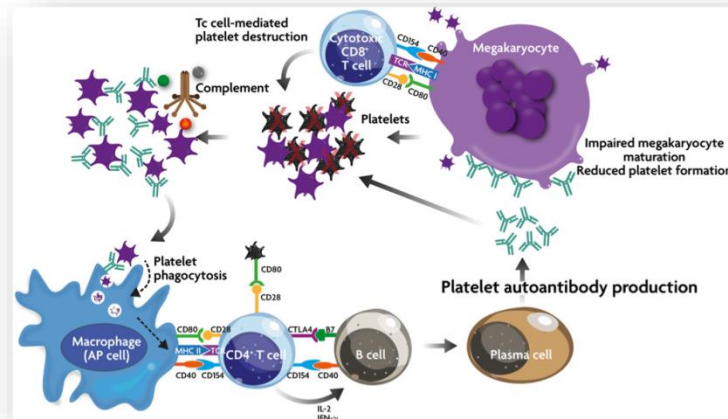
## Disclosures of Name Surname

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## Definizione TrombocitoPenia Immune

- Patologia immuno o cellulo-mediata acquisita (primaria/secondaria)
- Piastrinopenia isolata (PLT<100.000)
  - Malattia?
  - Condizione?
  - Disordine?

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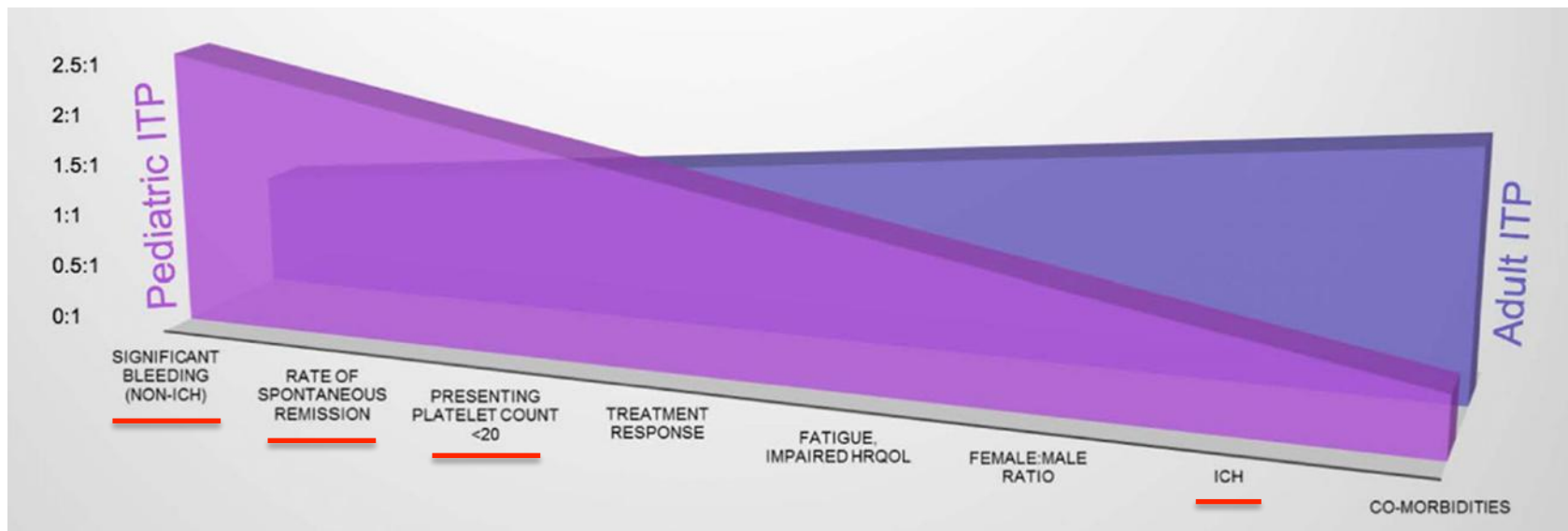
incidenza annua 0.4-12 su 100.000  
prevalenza 10-20 ogni 100.000  
età 3-5 anni (M:F = 1:1)  
mortalità complessiva ~1%



## Pediatric ITP: is it different from adult ITP?

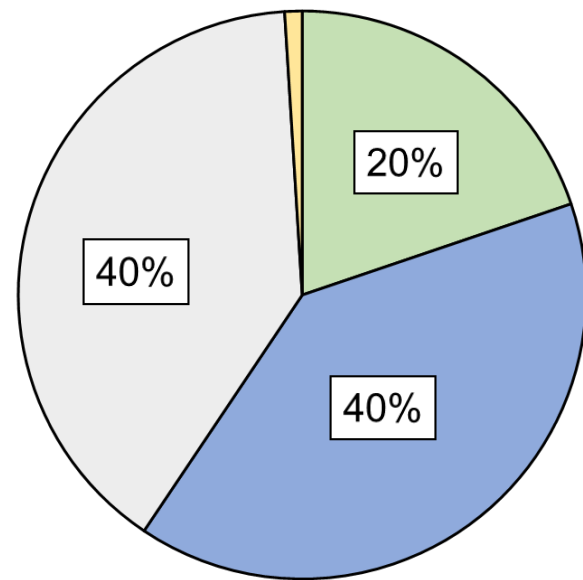
Jenny M. Despotovic and Amanda B. Grimes

Department of Pediatrics, Hematology/Oncology Section, Baylor College of Medicine, Houston, TX



## Definizione TrombocitoPenia Immune

<b>ITP di nuova diagnosi</b>	Risoluzione < 3 mesi dalla diagnosi
<b>ITP persistente</b>	Risoluzione tra 3-12 mesi dalla diagnosi
<b>ITP cronica</b>	Risoluzione > 12 mesi
<b>ITP refrattarie</b>	<ol style="list-style-type: none"><li>1. Fallimento o ricaduta dopo splenectomia</li><li>2. ITP severa e/o elevato rischio di sanguinamento richiedente terapia</li></ol>



■ di nuova insorgenza ■ persistente ■ cronica ■ refrattaria

## Grading of hemorrhage in children with idiopathic thrombocytopenic purpura

George R. Buchanan, MD, and Leab Adix, BS

Modified Buchanan and Adix bleeding score, overall bleeding severity

Grade		
0	None	No new hemorrhage of any kind
1	Minor	Few petechiae ( $\leq 100$ total) and/or $\leq 5$ small bruises ( $\leq 3$ cm diameter), no mucosal bleeding
2	Mild	Many petechiae ( $> 100$ total) and/or $> 5$ large bruises ( $> 3$ cm diameter)
3	Low Risk*	Blood crusting in nares, painless oral purpura, oral/palatal petechiae, buccal purpura along molars only, mild epistaxis $\leq 5$ minutes
	High Risk*	Epistaxis $> 5$ minutes, hematuria, hematochezia, painful oral purpura, significant menorrhagia
4	Severe	Mucosal bleeding or suspected internal hemorrhage (brain, lung, muscle, joint, etc) that requires immediate medical attention or intervention
5	Life threatening/ Fatal	Documented intracranial hemorrhage or life threatening or fatal hemorrhage at any site

\* Modification: Original Buchanan and Adix Grade 3/Moderate- overt mucosal bleeding (epistaxis, gum bleeding, oropharyngeal blood blisters, menorrhagia, gastrointestinal bleeding, etc) that does not require immediate medical attention or intervention

GRADO	CONTA PIASTRINICA
LIEVE	Plt 50 – 100.000/mm <sup>3</sup>
MODERATO	Plt 20 – 50.000/mm <sup>3</sup>
SEVERO	Plt $< 20.000/mm^3$

## Eventi emorragici severi

*J Thromb Haemost.* 2015 March ; 13(3): 457–464. doi:10.1111/jth.12813.

### Severe bleeding events in adults and children with primary immune thrombocytopenia: a systematic review

C. NEUNERT\*, N. NOROOZI†, G. NORMAN‡, G. R. BUCHANAN§, J. GOYT, I. NAZI†, J. G. KELTON†, and D. M. ARNOLD†¶

	Newly-diagnosed, %	Chronic, %	All disease stages, %
Children only ( <i>n</i> = 1965)	0.4 (0.1–0.9)	1.3 (0.4–2.7)	0.4 (0.2–0.7)
Adults only ( <i>n</i> = 1896)	0.6 (0–1.8)	1.8 (0.9–2.8)	1.4 (0.9–2.1)
Either children or adults* ( <i>n</i> = 921)	0.2 (0.2–1.6)	1.6 (0.5–3.1)	1.2 (0.4–2.4)
Overall ( <i>n</i> = 4782)	0.4 (0.1–0.8)	1.6 (1.0–2.2)	1.0 (0.7–1.3)

\* Data for children and adults were not reported separately in these studies.

### MANAGEMENT OF CHALLENGING BLEEDING COMPLICATIONS | DECEMBER 5, 2015

#### Bleeding complications in immune thrombocytopenia

Donald M. Arnold

*Hematology Am Soc Hematol Educ Program* (2015) 2015 (1): 237–242.

Table 1. Frequency of ICH or severe bleeding in ITP

Study	N	Summary of results
<b>Pooled results of clinical studies</b>		
Neunert et al <sup>7</sup>	10 908	ICH: weighted proportion with ICH was 0.4% (95% CI, 0.2%–0.7%) for children; and 1.4% (95% CI, 0.9%–2.1%) for adults <b>Severe bleeding:</b> weighted proportion with severe bleeding was 20.2% (95% CI, 10.0%–32.9%) for children and 9.6% for adults (95% CI, 4.1%–17.1%) Risk of fatal hemorrhage was 0.4%/y for patients younger than 40, and 13%/y for patients 60 years and older
<b>ITP patient registries</b>		
ICIS (Kühne <sup>13</sup> )	2124	ICH: occurred in 10/1784 (0.6%) newly diagnosed children, and 6/340 (1.8%) newly diagnosed adults <b>Severe bleeding:</b> at diagnosis occurred in 25/863 (2.9%) children
ICIS II (Neunert <sup>14</sup> )	863	ICH: occurred in 1/96 (1.0%) children over 5 year follow-up
Nordic (Rosthøj <sup>15</sup> )	96	<b>Severe bleeding:</b> major hemorrhage occurred in 8/96 (8.3%) children
<b>Administrative databases</b>		
France (Moulis et al <sup>19</sup> )	3771	ICH: 0.4% of patients had ICH at diagnosis (all age groups) <b>Severe bleeding:</b> 1.1% had gastrointestinal bleeding at diagnosis
Denmark (Frederiksen <sup>17</sup> )	221	Adjusted hazard ratios for bleeding was 6.2 (95% CI, 2.8–13.5)

# Emorragia Intracranica (ICH)



## Pediatric ITP: is it different from adult ITP?

Jenny M. Despotovic and Amanda B. Grimes

Department of Pediatrics, Hematology/Oncology Section, Baylor College of Medicine, Houston, TX

**Table 2. Studies reporting ICH in children and adults with ITP**

First author, year	Methodology	Subjects	ICH incidence (%)	ITP phase at ICH	Platelet count at ICH ( $\times 10^9/L$ )
Lilleyman, 1994 <sup>21</sup>	Retrospective	Children	14/~11 000 (~0.1)	72% ND, 14% P, 14% C	<15
Iyori, 2000 <sup>22</sup>	Retrospective	Children	4/772 (0.5)	75% ND, 25% C	<10
Kühne, 2001 <sup>13</sup>	Prospective	Children	2/1 496 (0.1)	ND*	
Neunert, 2008 <sup>23</sup>	Prospective	Children	1/863 (0.1) [0-28 d]; 0/854 (0) [6-24 mo]	100% ND, 0% P/C	<20
Choudhary, 2009 <sup>25</sup>	Retrospective	Children	17/750 (2.3)	59% ND, 41% C	Median, 12 (range, 20-50)
Psaila, 2009 <sup>26</sup>	Retrospective	Children	40 (0.19-0.78)	45% ND, 25% P, 30% C	Median, 5 (<20 in 90%)
Elalfy, 2010 <sup>27</sup>	Retrospective	Children	10/1 840 (0.5)	40% ND, 20% P, 40% C	<10 in 70%
Nørgaard, 2011 <sup>19</sup>	Retrospective	Adults	5/407 (1.2)	C*	<30
Saeidi, 2014 <sup>8</sup>	Retrospective	Children & adults	Children 0/223 (0); adults 0/100 (0)	N/A	N/A
Neunert, 2015 <sup>14</sup>	Retrospective	Children & adults	Children (0.4); adults (1.4)	C (1.6%) > ND (0.4%)	
Zhou, 2015 <sup>28</sup>	Retrospective	Children	9/520 (1.7)	45% ND, 22% P, 33% C	Median, 6 (<20 in 89%); range, 0-32
Palandri, 2016 <sup>51</sup>	Retrospective	Adults	3/557 (0.5)		
Altomare, 2016 <sup>18</sup>	Retrospective	Adults	74/6 651 (1.1)		
Tsuda, 2017 <sup>20</sup>	Retrospective	Adults	5/169 (3)		<30
Schifferli, 2018 <sup>6</sup>	Prospective	Children & adults	Children 20/3 360 (0.6); adults 7/420 (1.7)	78% ND, 11% P, 11% C	<20 in 93%

## Emorragia Intracranica (ICH)

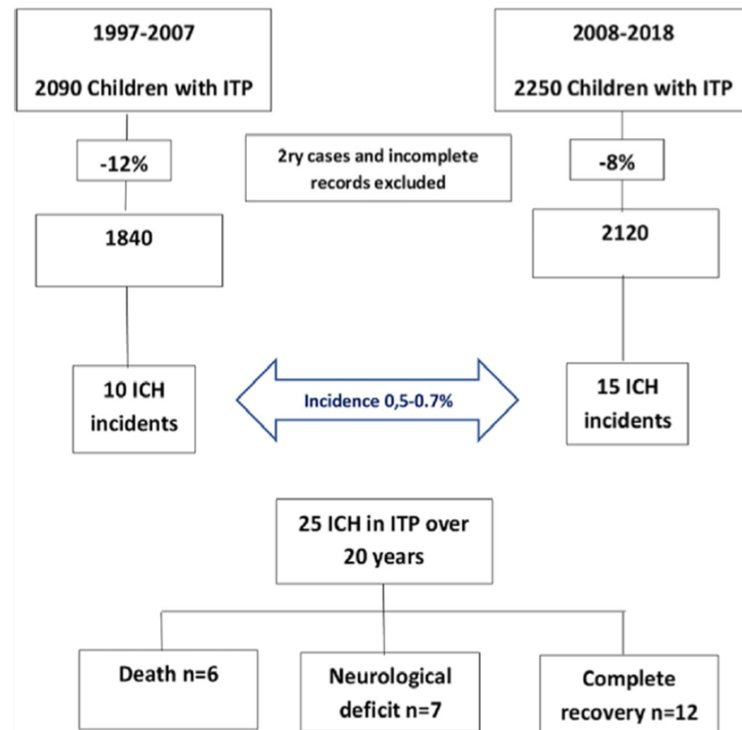
### Intracranial hemorrhage in primary immune thrombocytopenia (ITP): 20 years' experience in pediatrics

Mohsen Saleh Elalfy<sup>1</sup> · Khadiga Yehia Elsayed Mousa Eltonbary<sup>1,2</sup> · Islam R. El Ghamry<sup>1</sup> · Omar Elalfy<sup>3</sup> · Marwa Wahid<sup>1</sup> · Mohamed Badr<sup>4</sup> · Tamer Hassan<sup>4</sup> · Ahmed Mansour<sup>5</sup> · Mohamed Meabed<sup>6</sup> · Mahmoud El-Hawy<sup>7</sup> · Ilham Youssry<sup>8</sup> · Marwa Abd Elhady<sup>8</sup> · Mohamed Elshanshory<sup>9</sup> · Khalid Elsayh<sup>10</sup> · Hoda M. Hassab<sup>11</sup>

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**Table 2** Clinical profile of 15 children with ITP prior to ICH during the period of 2008–2018

Case	Sex/age (yr)	Bleed	Stage	Initial response	Treatment just prior to ICH	PC × 10 <sup>9</sup> /L at ICH	Treatment of ICH	Outcome
1 <sup>†</sup>	Male 12	P--MB	Acute	NR	S	8	IVIG/HDMP	NS
2 <sup>†</sup>	Female 11	P--MB	Persistent	PR	No	12	IVIG/HDMP	NS
3	Male 6	P--MB	Chronic	NR	No	8	IVIG/TPO	Death
4 <sup>†</sup>	Female 13	P--H	Acute	PR	S	3	IVIG	ND
5* <sup>†</sup>	Female 4	P--MB	Chronic	PR	TPO	4	IVIG/HDMP/TPO	NS
6 <sup>†</sup>	Female 5	P--MB	Chronic	PR	Taper S	5	IVIG/HDMP	NS
7 <sup>†</sup>	Male 3	P--MB	Chronic	NR	S	6	IVIG	Death
8	Female 11	P--H	Acute	CR	S	7	IVIG/HDMP	ND
9	Female 8	MB	Chronic	NR	Taper S	9	IVIG	Death
10* <sup>†</sup>	Female 11	H-MB	Chronic	CR	Taper S	1	IVIG/HDMP	NS
11* <sup>†</sup>	Male 12	H-MB	Chronic	PR	S	4	IVIG/HDMP	NS
12 <sup>†</sup>	Female 12	P--MB	Acute	PR	Taper S	14	IVIG/HDMP	NS
13 <sup>†</sup>	Female 2	--	Chronic	NR	S	16	IVIG	ND
14	Female 12	P	Acute	PR	Taper S	6	IVIG/HDMP	ND
15	Male 11	P	Acute	NR	No	5	IVIG/HDMP	Death



## Studio retrospettivo multicentrico



### 13 Centri AIEOP

Ancona, Bari,  
Bologna, Brescia,  
Catania, Firenze,  
Monza, Palermo,  
Parma, Taranto,  
Torino, Trento, Trieste



**Analisi descrittiva  
eventi emorragici  
gravi** in pazienti  
pediatrici con ITP  
negli ultimi **15 anni**



- ◆ Tipo: Studio **retrospettivo multicentrico**
- ◆ Metodo: Revisione cartelle cliniche
- ◆ Periodo: **Gennaio 2010 – Dicembre 2024**
- ◆ Popolazione: Pazienti **< 18 anni** con **ITP primaria**



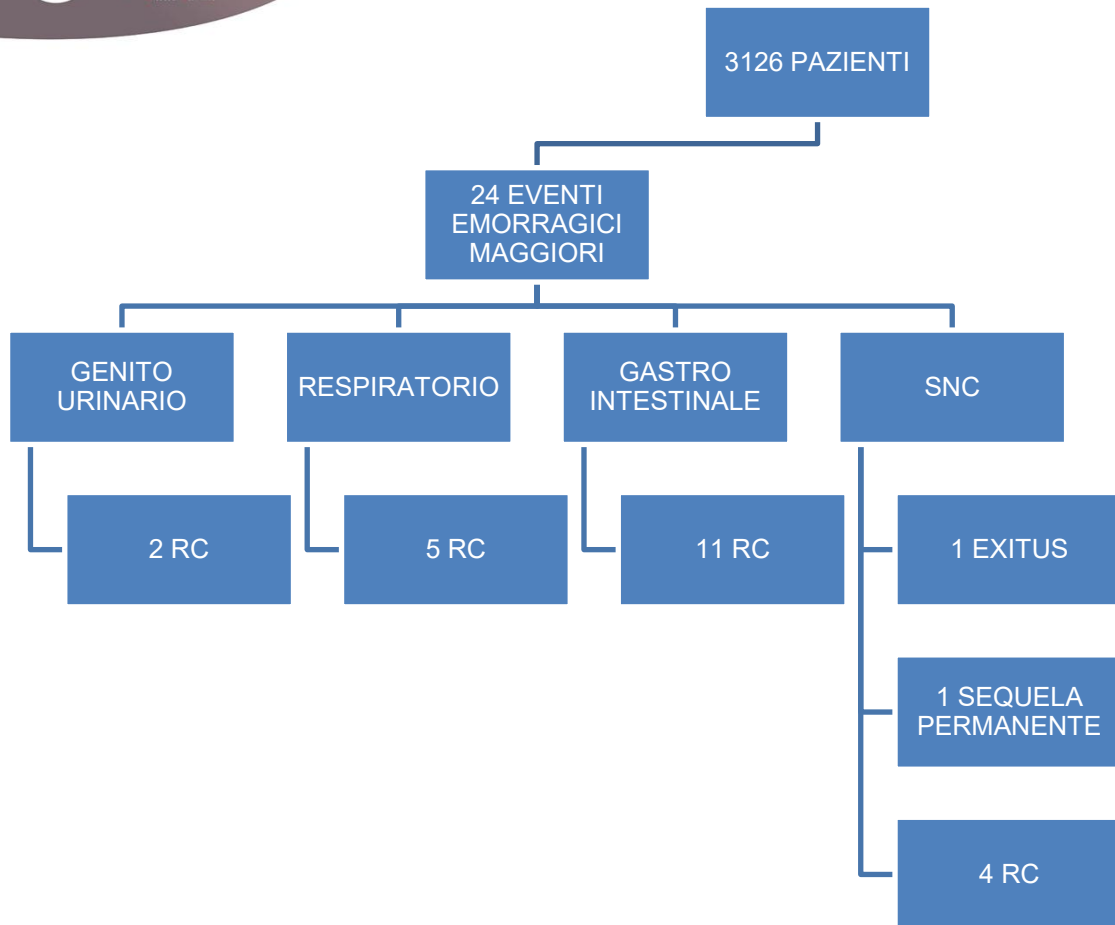
### **Criteri di inclusione**

Diagnosi **confermata di ITP primaria**  
Età **< 18 anni** al momento della diagnosi

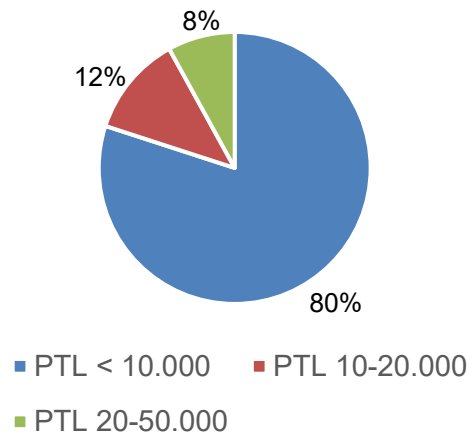


### **Criteri di esclusione**

**Piastrinopenie secondarie** ad altre patologie



## CONTA PIASTRINICA



# Profilo clinico 24 pazienti con PTI prima dell'evento emorragico maggiore

46%

21%

8%

25%

GENERE	ETA'	TRATTAMENTI PREGRESSI	SEDE EVENTO	TIPO EMORRAGIA	CONTA PTL	FASE ITP	TRATTAMENTI CONCOMITANTI	CONDIZIONI PREDISPONENTI	TRATTAMENTI PER L'EVENTO	SEQUELE
F	1		GU	ematochezia	<10.000/MMC	DI NUOVA INSORGENZA		TRAUMA GENITALE	IGEV/TXA	
F	12		GU	menorragia	10-20.000/MMC	DI NUOVA INSORGENZA			PTL/GRC	
F	11		GU	menorragia	<10.000/MMC	DI NUOVA INSORGENZA			IGEV/TRX	
F	16	MPDN/MMF	GU	menorragia	20-50.000/MMC	CRONICA	SRL		ALTRO	
F	14		GU	macroematuria	<10.000/MMC	DI NUOVA INSORGENZA			IGEV/MPDN/PTL/ROMIPLOSTIM	
F	14		GU	menorragia	<10.000/MMC	DI NUOVA INSORGENZA			IGEV/MPDN	
M	10	MPDN/IGEV/MMF/SRL/EPAG	GU	macroematuria	<10.000/MMC	CRONICA	SRL/EPAG		IGEV/MPDN/PTL/RTX	
F	9		GU	macroematuria	<10.000/MMC	DI NUOVA INSORGENZA			IGEV/MPDN/PTL	
F	14		GU	menorragia	<10.000/MMC	DI NUOVA INSORGENZA			IGEV/MPDN	
F	18	MPDN/IGEV	GU	emoperitoneo	20-50.000/MMC	CRONICA	PDN		PDN	
M	6	MPDN/IGEV	GU	macroematuria	<10.000/MMC	CRONICA	EPAG		PDN	
F	4	MPDN/IGEV	RESPIRATORIA	epistassi	10-20.000/MMC	CRONICA		CMV IN SINDROME KABUKI	IGEV/MPDN/PTL/GRC	
M	6	MPDN/IGEV/RTX/EPAG	RESPIRATORIA	epistassi massiva	<10.000/MMC	CRONICA	RAPAMICINA, PDN		IGEV	
M	1		RESPIRATORIA	mucosa	<10.000/MMC	DI NUOVA INSORGENZA		OTITE	IGEV/TXA/FVIIA	
F	8		RESPIRATORIA	mucosa	<10.000/MMC	DI NUOVA INSORGENZA		CHIRURGIA NASALE	IGEV/MPDN/PTL/GRC/TXA	
M	7		RESPIRATORIA	epistassi massiva	<10.000/MMC	DI NUOVA INSORGENZA	PDN/IGEV/ROMIPLOSTIM		MPDN/PTL/GRC	
F	4		GI	ematemesi, ematochezia	<10.000/MMC	DI NUOVA INSORGENZA	MPDN		IGEV/MPDN/TRX/OCTREOTIDE	
M	2		GI	sanguinamento cavo orale	<10.000/MMC	DI NUOVA INSORGENZA		GENGIVO-STOMATITE ERPETICA	IGEV/MPDN/PTL/GRC	
M	3		SNC	emorragia cerebrale massiva	<10.000/MMC	DI NUOVA INSORGENZA	IGEV		PTL	
M	10	MPDN/IGEV	SNC	emorragia cerebrale massiva	<10.000/MMC	CRONICA			MPDN/PTL/SPLENECTOMIA	
F	12		SNC	emorragia cerebrale massiva	10-20.000/MMC	DI NUOVA INSORGENZA		INCIDENTE STRADALE	IGEV/MPDN	
M	17	MMF	SNC	emorragia cerebrale massiva	<10.000/MMC	CRONICA			IGEV/MPDN/PTL	
F	12	MMF/SRL/RTX/ROMIPLOSTIM	SNC	emorragia cerebrale massiva	<10.000/MMC	CRONICA			IGEV/PTL	EXITUS
M	1	MPDN/IGEV	SNC	emorragia cerebrale massiva	<10.000/MMC	DI NUOVA INSORGENZA			IGEV/PTL	emiparesi

## RISULTATI

**Pazienti totali: 3126****• Eventi: 24 (0,77%)**

- PTI di nuova insorgenza: 15 (62%)
- PTI cronica: 9 (38%)
- **ICH: 6 (0,2%)**
- PTL <10.000/mmc: 19 (80%)
- PTL 10-20.000/mmc: 3 (12%)
- PTL 20-50.000/mmc: 2 (8%)

**• Trattamenti concomitanti**

- Nessuno: 16 (66%)
- Immunoglobuline: 1 (ND)
- PDN/mPDN: 3 (1 ND, 2 C)
- Ig + mPDN + TPO: 1 (ND)
- Altro: 3
  - 1 sirolimus + TPO (C)
  - 1 sirolimus (C)
  - 1 eltrombopag (C)

## Conclusioni

Su 3126 pazienti pediatrici (13 centri AEIOP) affetti da PTI:

- Incidenza cumulativa eventi emorragici severi in ITP di nuova diagnosi: 0,5%
- Incidenza cumulativa ICH: 0,2%
- **Exitus: 1 (0,03%)**

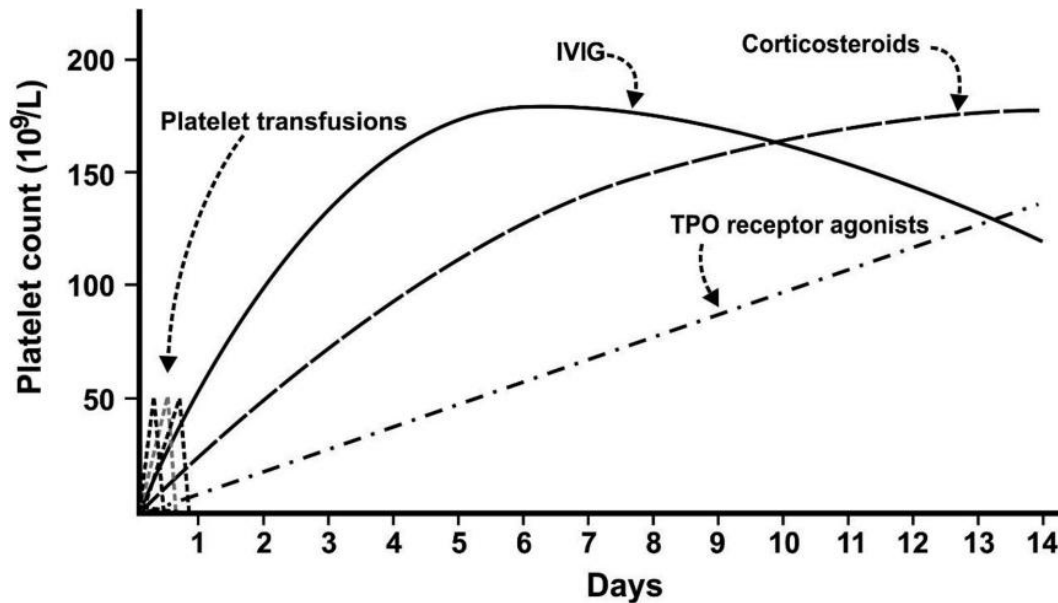
## Prospettive

Necessario realizzare un Registro AIEOP dedicato

- Raccogliere in modo uniforme incidenza e outcome
- Definire possibili fattori di rischio
- Migliorare e uniformare l'approccio terapeutico
- Confrontare i dati con altre realtà internazionali
- Orientare la ricerca

**Nella PTI curare la clinica e non la conta piastrinica**

## Approcci terapeutici negli eventi severi in PTI





## RINGRAZIAMENTI

Dr.ssa Silvia Gamba



GdL Coagulazione AIEOP



Centro Maria Letizia  
Verga  
IRCCS San Gerardo  
Monza



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GRAZIE PER L'ATTENZIONE!

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