



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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ROMA, 22-24 Settembre 2025
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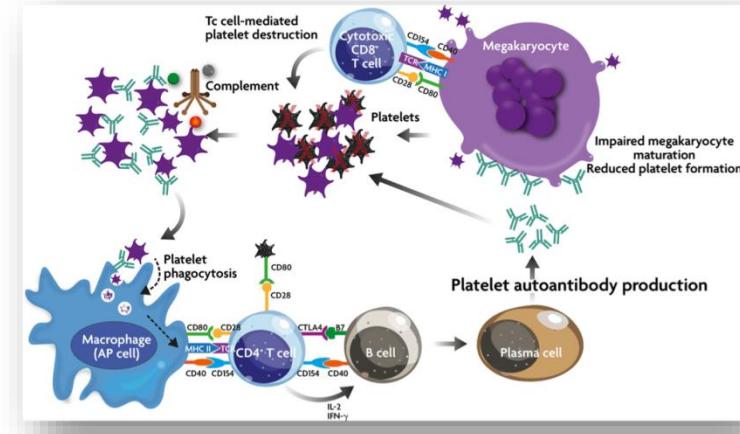
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Definizione TrombocitoPenia Immune

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

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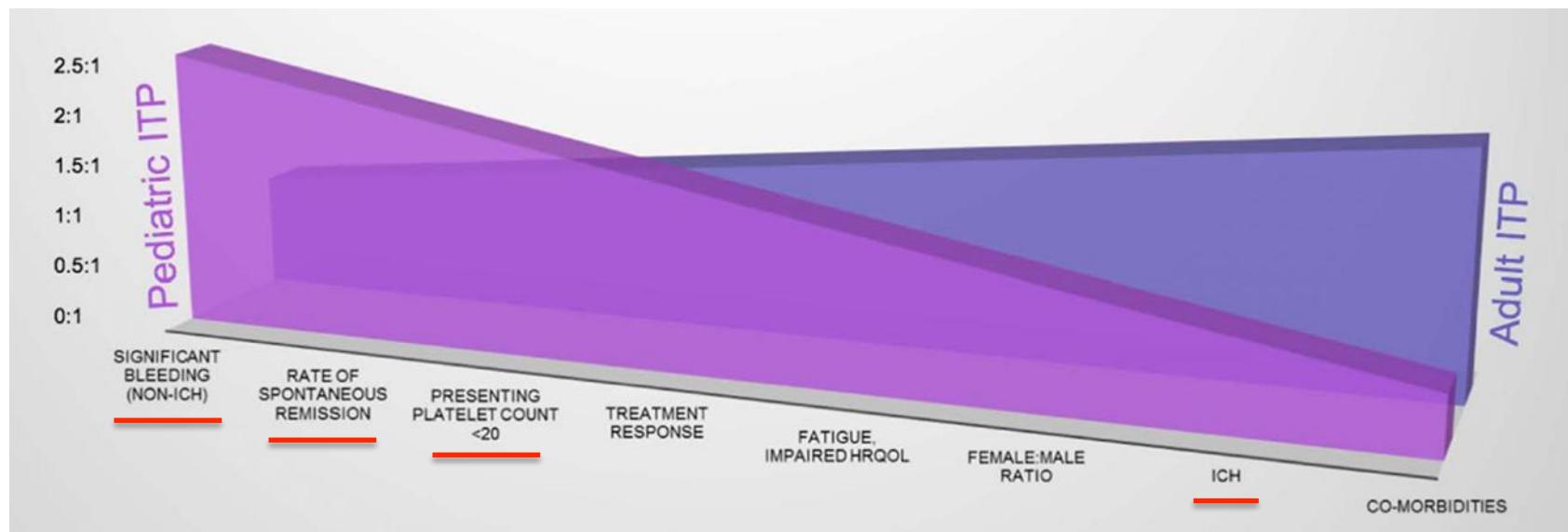
incidenza annua 0.4-12 su 100.000
prevalenza 10-20 ogni 100.000
età 3-5 anni (M:F = 1:1)
mortalità complessiva ~1%



Pediatric ITP: is it different from adult ITP?

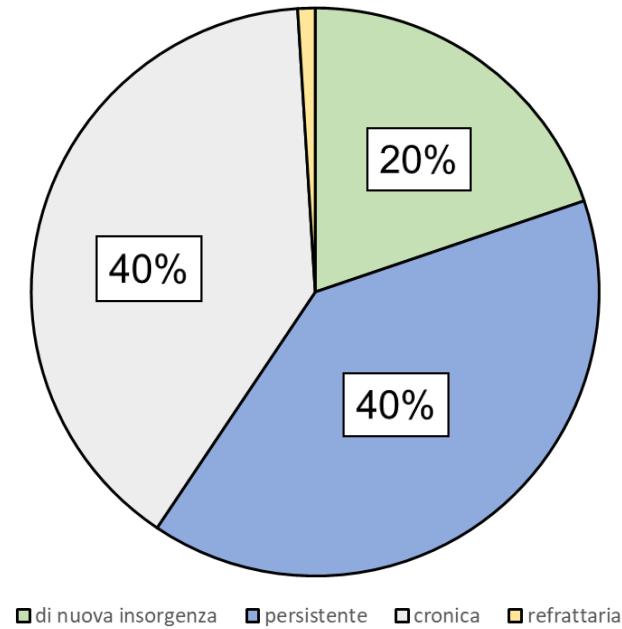
Jenny M. Despotovic and Amanda B. Grimes

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Definizione TrombocitoPenia Immune

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



Grading of hemorrhage in children with idiopathic thrombocytopenic purpura

George R. Buchanan, MD, and Leah 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	<i>Low Risk* Moderate</i>	<i>Blood crusting in nares, painless oral purpura, oral/palatal petechiae, buccal purpura along molars only, mild epistaxis \leq 5 minutes</i>
	<i>High Risk* Moderate</i>	<i>Epistaxis $>$ 5 minutes, hematuria, hematochezia, painful oral purpura, significant menorrhagia</i>
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

GRADO	CONTA PIASTRINICA
LIEVE	Plt 50 – 100.000/mmc
MODERATO	Plt 20 – 50.000/mmc
SEVERO	Plt $<$ 20.000/mmc

* 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

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. GOY[†], I. NAZI[†], J. G. KELTON[†], and D. M. ARNOLD^{†,¶}

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

ICH: 0.4% of patients had ICH at diagnosis (all age groups)
 Severe bleeding: 1.1% had gastrointestinal bleeding at diagnosis
 Adjusted hazard ratios for bleeding was 6.2 (95% CI, 2.8–13.5)

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
Pooled results of clinical studies Neunert et al ⁷	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 Severe bleeding: 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
Cohen et al ¹²	1817	
ITP patient registries ICIS (Kühne ¹³)	2124	ICH: occurred in 10/1784 (0.6%) newly diagnosed children, and 6/340 (1.8%) newly diagnosed adults
ICIS II (Neunert ¹⁴) Nordic (Rosthøj ¹⁵)	863 96	Severe bleeding: at diagnosis occurred in 25/863 (2.9%) children ICH: occurred in 1/96 (1.0%) children over 5 year follow-up Severe bleeding: major hemorrhage occurred in 8/96 (8.3%) children
Administrative databases France (Moulis et al ¹⁶) Denmark (Frederiksen ¹⁷)	3771 221	ICH: 0.4% of patients had ICH at diagnosis (all age groups) Severe bleeding: 1.1% had gastrointestinal bleeding at diagnosis 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 ²¹	Retrospective	Children	14/~11 000 (~0.1)	72% ND, 14% P, 14% C	<15
Iyori, 2000 ²²	Retrospective	Children	4/772 (0.5)	75% ND, 25% C	<10
Kühne, 2001 ¹³	Prospective	Children	2/1 496 (0.1)	ND*	
Neunert, 2008 ²³ 2013 ²⁴	Prospective	Children	1/863 (0.1) [0-28 d]; 0/854 (0) [6-24 mo]	100% ND, 0% P/C	<20
Choudhary, 2009 ²⁵	Retrospective	Children	17/750 (2.3)	59% ND, 41% C	Median, 12 (range, 20-50)
Psaila, 2009 ²⁶	Retrospective	Children	40 (0.19-0.78)	45% ND, 25% P, 30% C	Median, 5 (<20 in 90%)
Elalfy, 2010 ²⁷	Retrospective	Children	10/1840 (0.5)	40% ND, 20% P, 40% C	<10 in 70%
Nørgaard, 2011 ¹⁹	Retrospective	Adults	5/407 (1.2)	C*	<30
Saeidi, 2014 ⁸	Retrospective	Children & adults	Children 0/223 (0); adults 0/100 (0)	N/A	N/A
Neunert, 2015 ¹⁴	Retrospective	Children & adults	Children (0.4); adults (1.4)	C (1.6%) > ND (0.4%)	
Zhou, 2015 ²⁸	Retrospective	Children	9/520 (1.7)	45% ND, 22% P, 33% C	Median, 6 (<20 in 89%); range, 0-32
Palandri, 2016 ⁵¹	Retrospective	Adults	3/557 (0.5)		
Altomare, 2016 ¹⁸	Retrospective	Adults	74/6 651 (1.1)		
Tsuda, 2017 ²⁰	Retrospective	Adults	5/169 (3)		
Schifferli, 2018 ⁶	Prospective	Children & adults	Children 20/3 360 (0.6); adults 7/420 (1.7)	78% ND, 11% P, 11% C	<30 <20 in 93%

Emorragia Intracranica (ICH)

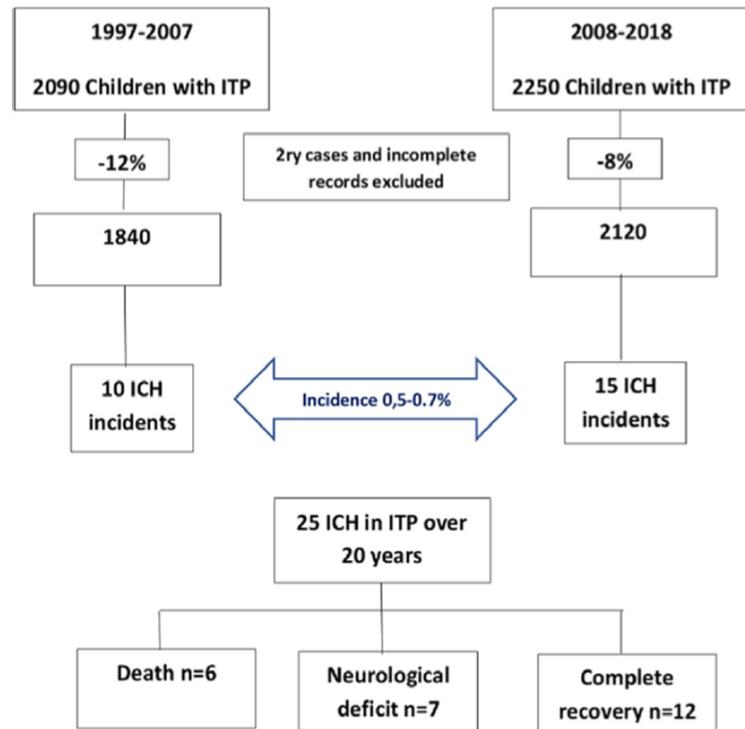
Intracranial hemorrhage in primary immune thrombocytopenia (ITP):
20 years' experience in pediatrics

Mohsen Saleh Elalfy¹ · Khadiga Yehia Elsayed Mousa Eltonbary^{1,2} · Islam R. El Ghamry¹ · Omar Elalfy³ ·
Marwa Wahid¹ · Mohamed Badr⁴ · Tamer Hassan⁴ · Ahmed Mansour⁵ · Mohamed Meabed⁶ · Mahmoud El-Hawy⁷ ·
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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 ⁹ /L at ICH	Treatment of ICH	Outcome
1 [†]	Male 12	P-MB	Acute	NR	S	8	IVIG/HDMP	NS
2 [†]	Female 11	P-MB	Persistent	PR	No	12	IVIG/HDMP	NS
3	Male 6	P-MB	Chronic	NR	No	8	IVIG/TPO	Death
4 [†]	Female 13	P-H	Acute	PR	S	3	IVIG	ND
5 ^{*†}	Female 4	P-MB	Chronic	PR	TPO	4	IVIG/HDMP/TPO	NS
6 [†]	Female 5	P-MB	Chronic	PR	Taper S	5	IVIG/HDMP	NS
7 [†]	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 ^{*†}	Female 11	H-MB	Chronic	CR	Taper S	1	IVIG/HDMP	NS
11 ^{*†}	Male 12	H-MB	Chronic	PR	S	4	IVIG/HDMP	NS
12 [†]	Female 12	P-MB	Acute	PR	Taper S	14	IVIG/HDMP	NS
13 [†]	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**



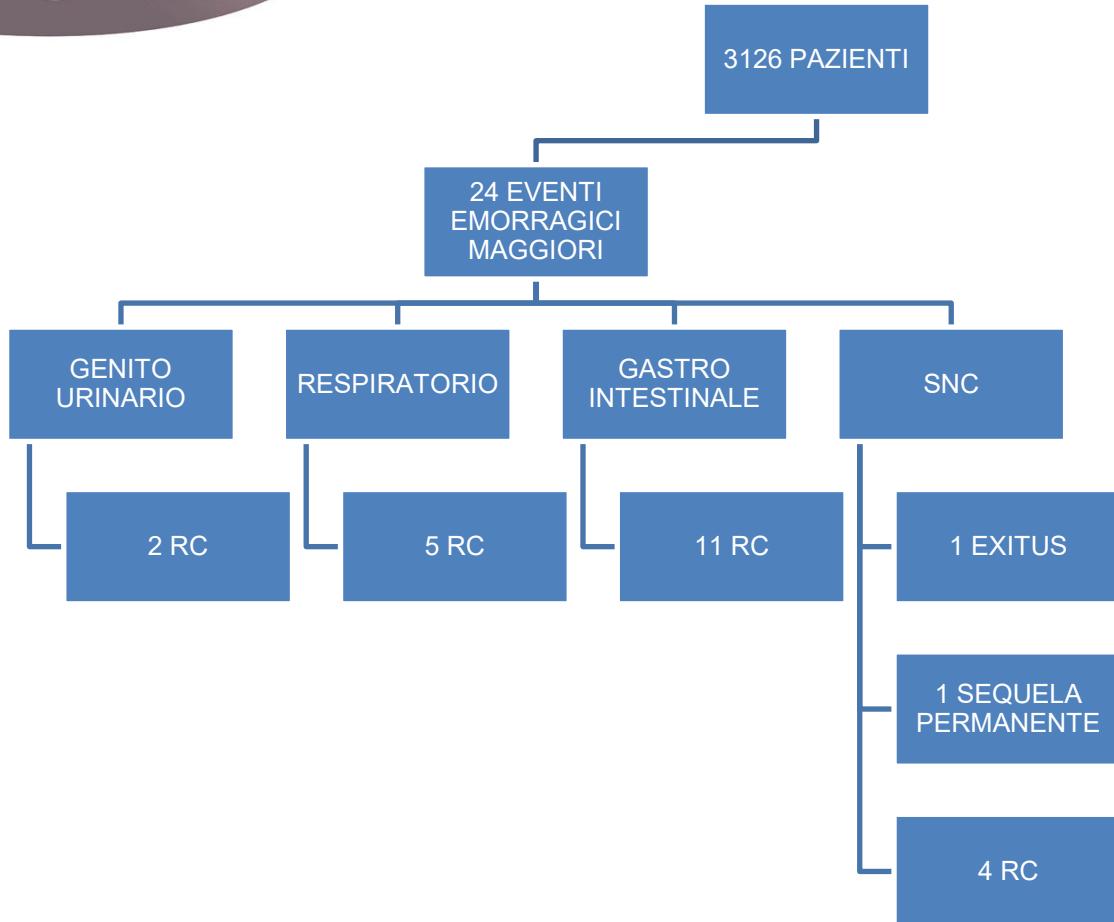
Criteri di inclusione

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

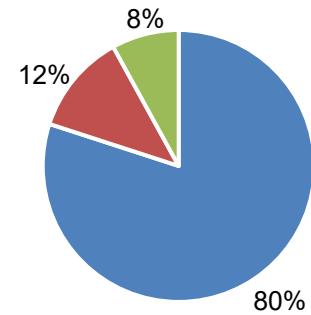


Criteri di esclusione

Piastrinopenie secondarie ad altre patologie



CONTA PIASTRINICA



- PTL < 10.000
- PTL 10-20.000
- PTL 20-50.000

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

GENERE	ETA'	TRATTAMENTI PREGESSI	SEDE EVENTO	TIPO EMORRAGIA	CONTA PTL	FASE ITP	TRATTAMENTI CONCOMITANTI	CONDIZIONI PREDISPOSTE	TRATTAMENTI PER L'EVENTO	SEQUELE
46%	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
21%	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/E	PAG	RESPIRATORIA	epistassi massiva	<10.000/MMC	CRONICA DI NUOVA INSORGENZA	RAPAMICINA, PDN	
	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
8%	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
25%	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
	M	1	MPDN/IGEV	SNC	emorragia cerebrale massiva	<10.000/MMC	DI NUOVA INSORGENZA			IGEV/PTL

EXITUS

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 AIEOP) affetti da PTI:

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

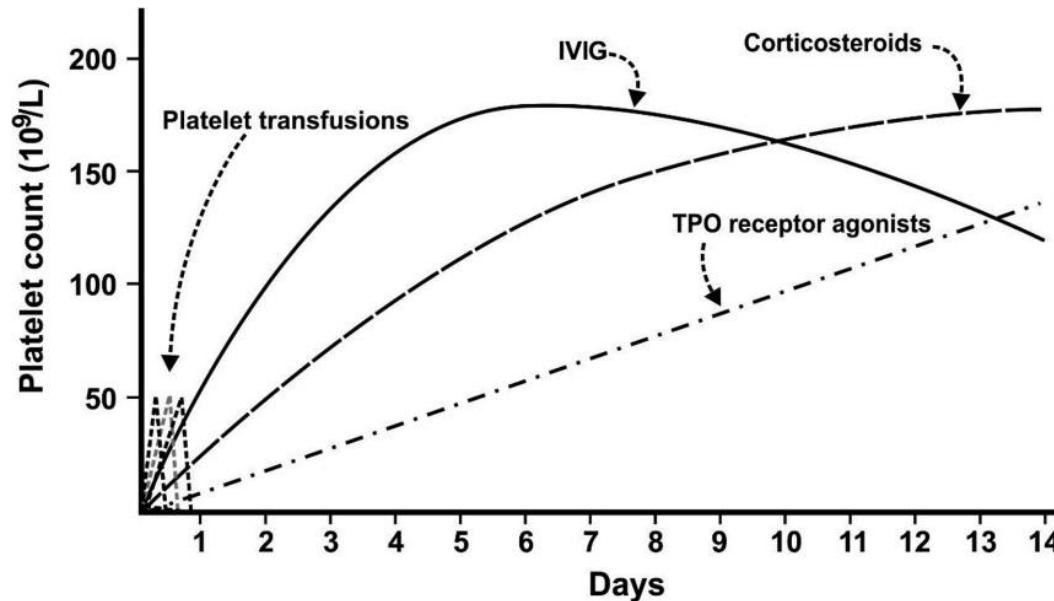
Prospettive

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



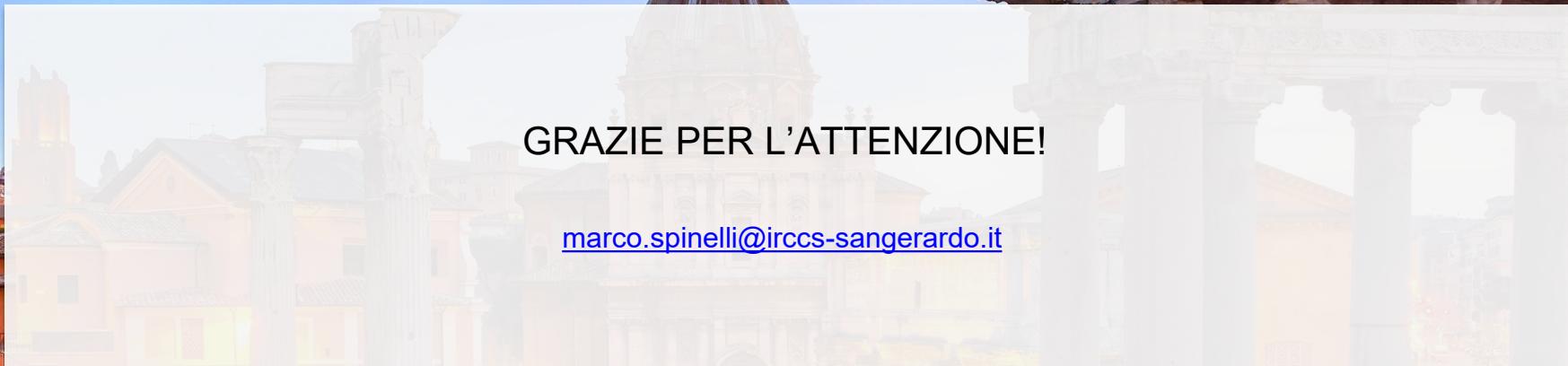
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