AIEOP
ASSOCIAZIONE ITALIANA EMATOLOGIA ONCOLOGIA PEDIATRICA

Presidente
A. Mastronuzzi

Segreteria Scientifica
A. Colombini, T. Perillo, A. Zibaldo

Giornate AIEOP

RIMINI
Hotel Savoia

13-14 aprile 2026

TUMORI DEL RENE

Filippo Spreafico

IRCCS Istituto Giannina Gaslini, Genova

I have no conflict of interest or competing interest to declare

Aggiornamento SIOP Umbrella

Quesiti di ricerca nei tumori renali

Nuovo paradigma terapeutico nel Wilms

Governance SIOP RTSG

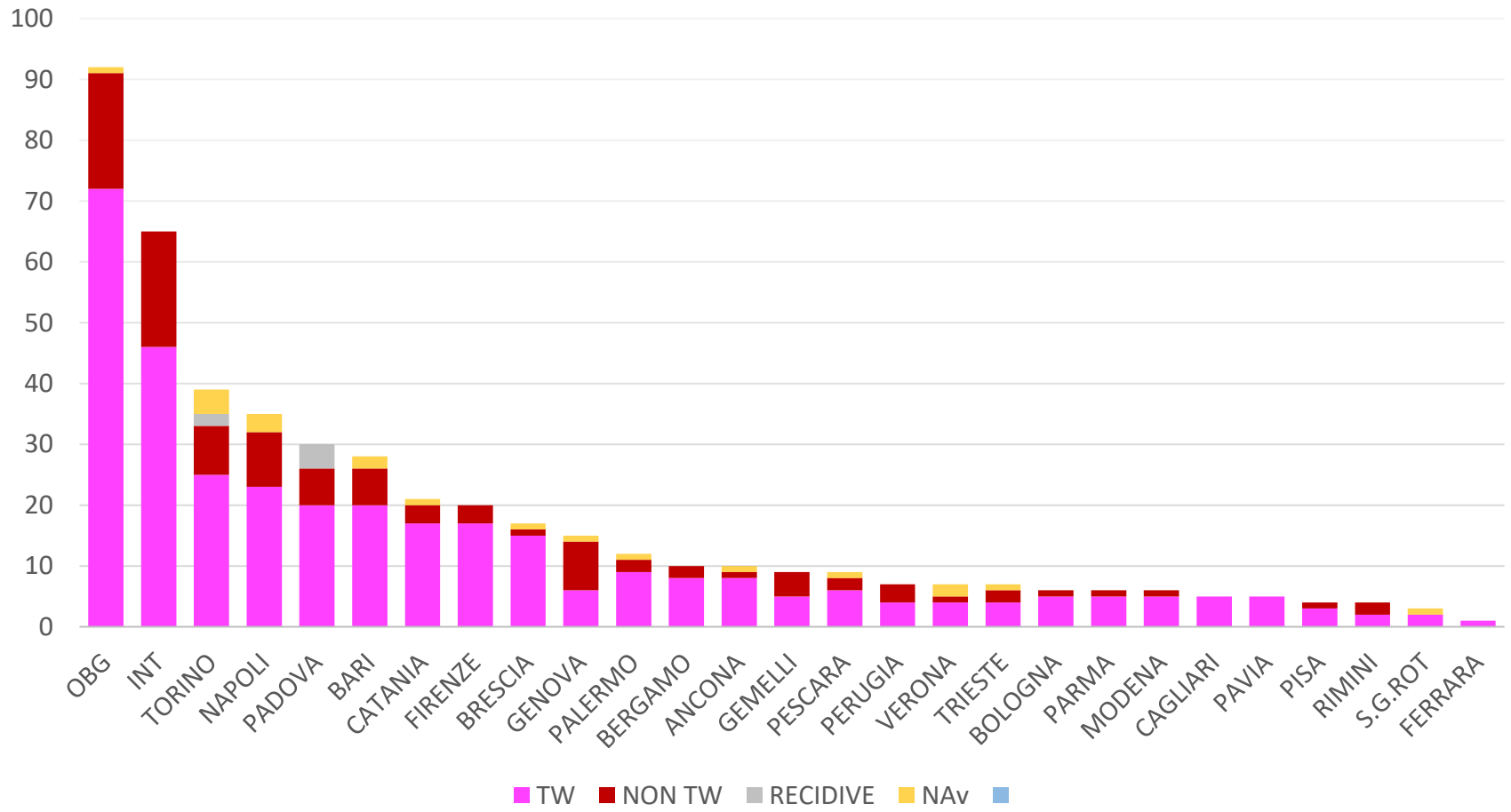
UMBRELLA: enrolment as per recruiting national/regional sites

(as of the 2nd of March)

	AR	AT	BE	BR	CZ	HR	DK	FR	GR	DE	HK	HU	IT	JP	LV	LT	NL	NO	PE	PL	SG	SK	SI	ES	SE	CH	UK	SA	CN-01	CN-02	RU-01	RU-02	Grand Total
2019				18				2	6				30				17							15			13		10				111
2020			4	117			12	73	11			5	61				28	7						38		11	66		7	14	5	10	469
2021		2	17	151			4	111	17	4		10	76				28	8		8	5			39		17	95		26	46	29	29	722
2022	8	0	18	144	12		10	100	15	77		6	81				31	13		1	4		3	44		15	95		8	35	30	37	787
2023	8	1	16	163	6		11	104	21	100	1	13	81	22	5		30	5		64	2	13	0	37	2	20	96		21	38	17	7	904
2024	26	20	15	151	17		18	100	10	81	1	7	53	30	3		22	14	3	32	2	10	3	45	16	9	66		17	36	9	9	825
Jan-25	4	0	0	13	2		2	12	0	7	0	0	5	8	0	1	2	0	0	7	0	0	0	6	1	2	12		0	1	0	0	85
Feb-25	3	3	3	10	1		0	6	0	4	0	1	6	0	0	0	2	2	2	1	0	0	0	2	0	3	9		1	2	0	0	61
Mar-25	1	0	3	15	1	1	0	10	0	7	0	0	9	2	0	0	2	1	2	0	0	0	0	2	2	1	4		3	5	1	0	72
Apr-25	0	2	0	0	5	1	2	11	1	3	0	2	4	0	1	1	2	1	1	4	0	1	0	2	2	1	5		0	2	0	0	54
May-25	4	0	0	14	2	2	0	12	3	7	1	4	6	6	0	0	2	0	1	4	0	0	0	3	0	2	7		8	3	0	0	91
Jun-25	1	0	2	0	2	0	0	7	0	5	0	4	5	0	0	0	2	1	0	3	0	1	0	4	0	2	5		2	0	4	0	50
Jul-25	4	2	1	15	1	0	0	2	0	3	1	1	7	3	0	0	2	0	0	3	1	0	0	1	0	1	7	2	0	1	1	0	59
Aug-25	1	0	1	20	0	0	2	2	0	2	0	3	6	0	0	0	6	0	0	0	0	0	0	3	2	2	6	1	0	4	0	0	61
Sep-25	5	2	1	0	1	0	3	8	1	8	0	0	7	0	1	0	3	1	0	3	0	1	0	5	1	2	7	1	0	1	0	0	62
Oct-25	0	0	1	19	1	0	1	10	2	12	0	1	4	3	0	0	1	0	0	1	1	1	0	3	0	1	2	0	0	2	0	0	66
Nov-25	1	0	1	11	1	0	0	7	0	5	0	1	6	12	0	0	2	0	0	1	0	1	0	3	1	2	5	1	2	4	0	0	67
Dec-25	0	1	1	0	0	0	0	10	0	4	1	1	3	0	0	0	4	0	0	0	0	0	0	5	0	0	4	0	1	3	1	0	39
2025 Total	24	10	14	117	17	4	10	97	7	67	3	18	68	34	2	2	30	6	6	27	2	5	0	39	9	19	73	5	17	28	7	0	**767**
Jan-26	**3**	**2**	**1**	**16**	**0**	**0**	**1**	**6**	**1**	**6**	**0**	**0**	**6**	**0**	**0**	**1**	**6**	**0**	**0**	**2**	**0**	**1**	**0**	**5**	**2**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**65**
Feb-26	**4**	**2**	**2**	**25**	**0**	**0**	**0**	**4**	**0**	**6**	**0**	**2**	**7**	**2**	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**4**	**0**	**2**	**6**	**0**	**0**	**1**	**0**	**0**	**71**
Grand Total	**73**	**37**	**87**	**902**	**52**	**4**	**65**	**597**	**88**	**343**	**5**	**61**	**463**	**88**	**10**	**3**	**194**	**53**	**8**	**136**	**15**	**29**	**6**	**266**	**29**	**93**	**516**	**5**	**106**	**198**	**97**	**92**	**4721**

Total enrollment = 4721

471 CASI AIEOP IN UMBRELLA



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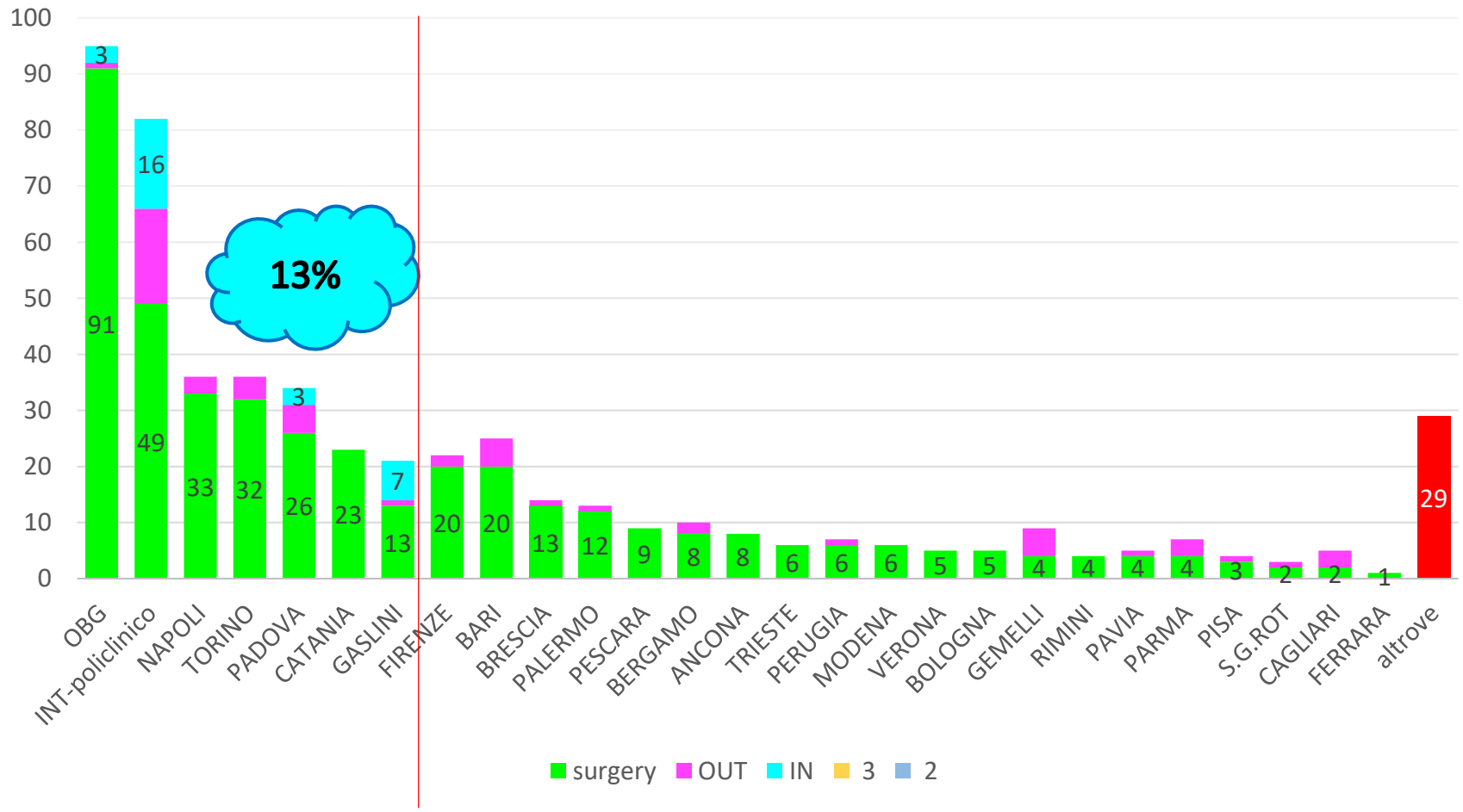
Chirurgia nei centri AIEOP (437)

migrazione



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su 447* casi, **29**% fa **biopsia** (128 si/318 no)

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*24 non (ancora) dati

Initial approach to 103 non-Wilms
after Central Imaging Review

26 (5.8%) chemioterapia

CCSK (6); RCC (4); RTK (1); Ewing (1); spindle cell (1); NM (3); sarcoma NAS (3);

Burkitt (1); adenofibroma (1); NBL (1); NC (3); angiomiolipoma (1)

28 nefrectomia

49 biopsia

T miofibroblastico (1); Burkitt (2); Ewing (3); RCC (16); angiomiolipoma (3); NBL (5); CCSK (2); RTK (3); NM (7); npl piccole cellule (1); npl mesenchimale (1); sarcoma (2); oncocitoma (1); altro (2)

CT '*senza necessità*' **1,6% (**7/447)

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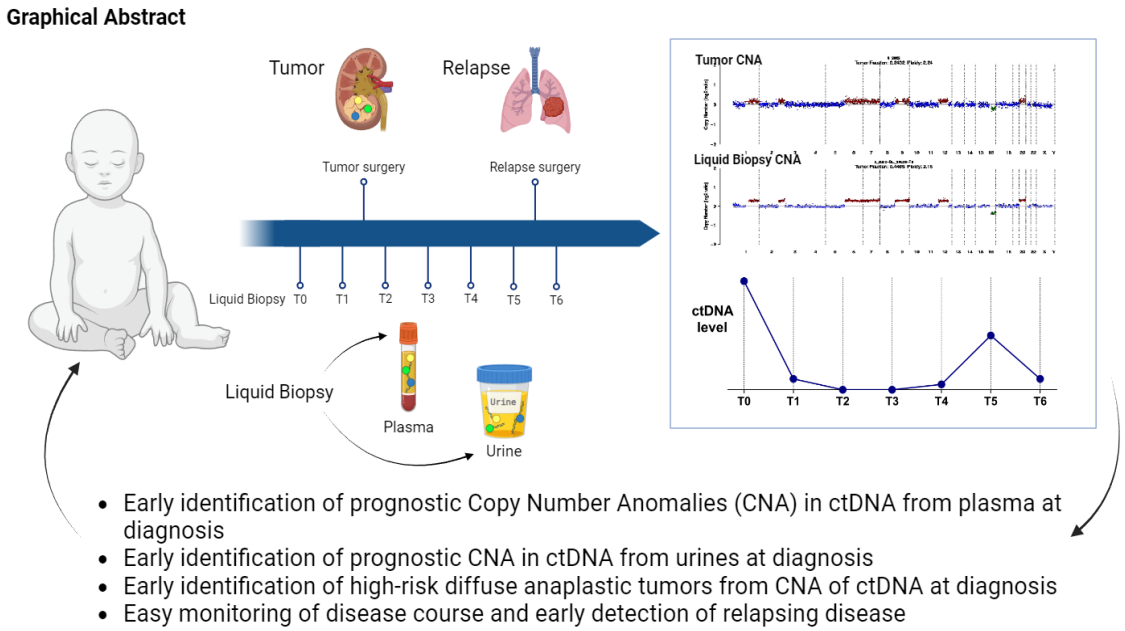
(Epi)Genetic alterations in circulating tumor DNA



Collabs.

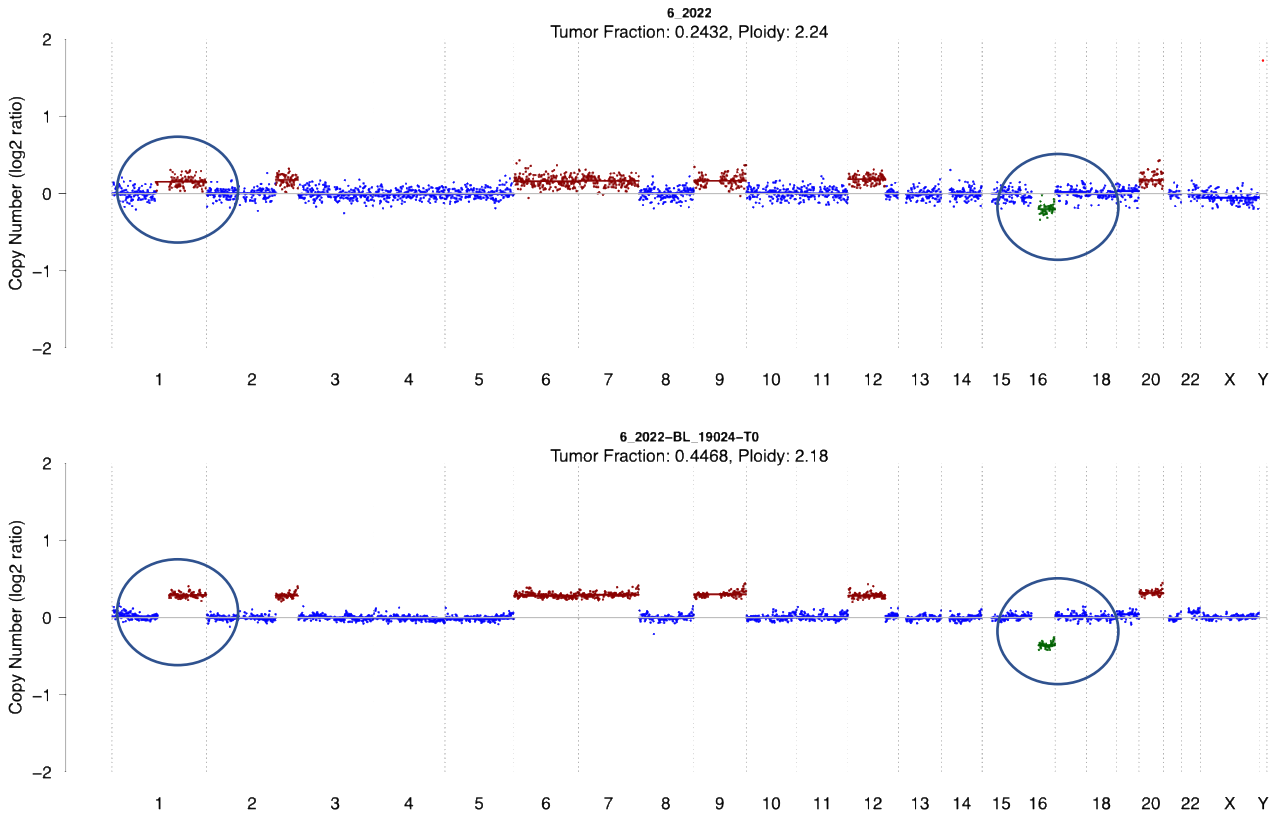
- Shallow WG Seq (INT)
- Metilation (INT)
- miRNA (OPBG)
- Digital PCR (Gaslini)

Ringraziamenti, Daniela Perotti

Ipotesi: ctDNA e tumore hanno identiche CNAs

TUMORE PRIMITIVO
+1 mese

ctDNA (esordio)



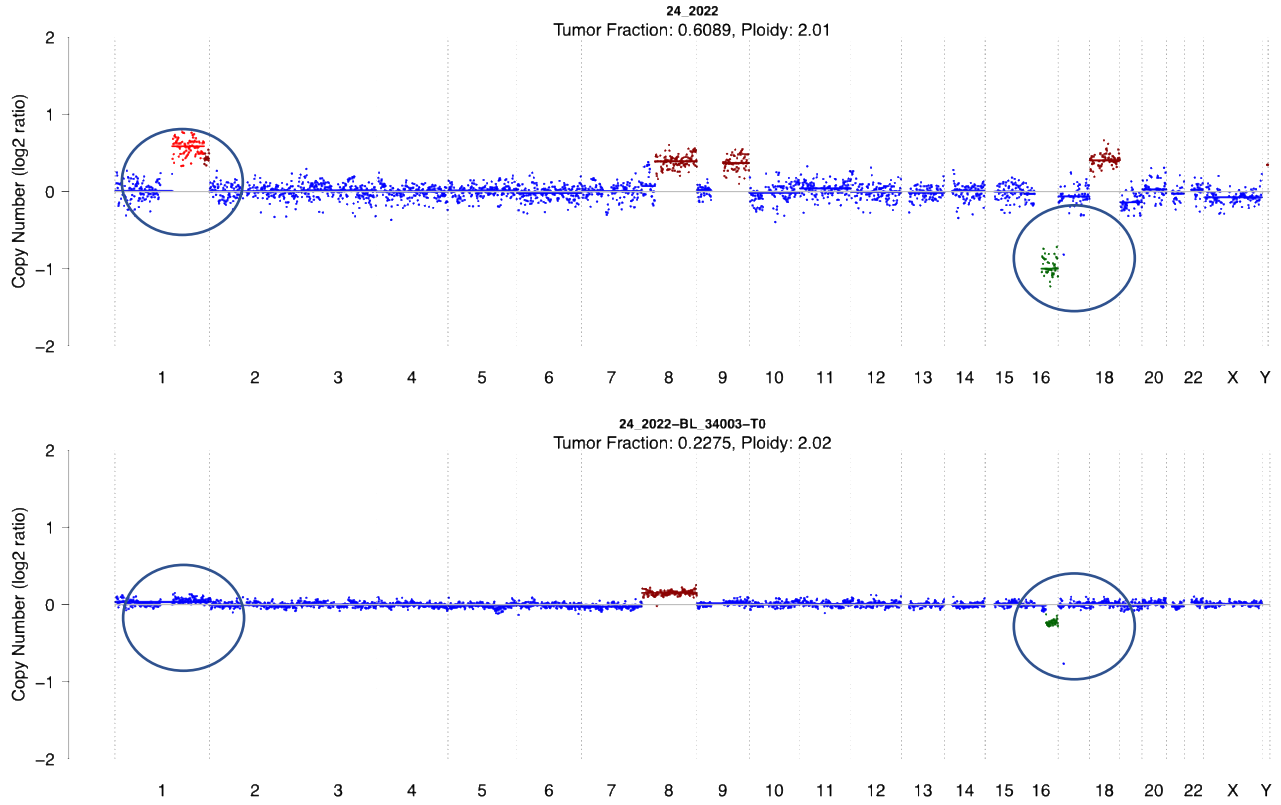
1q gain **17p loss**

Courtesy, D. Perotti

ctDNA ha meno CNAs del tumore

TUMORE PRIMITIVO
+1 mese

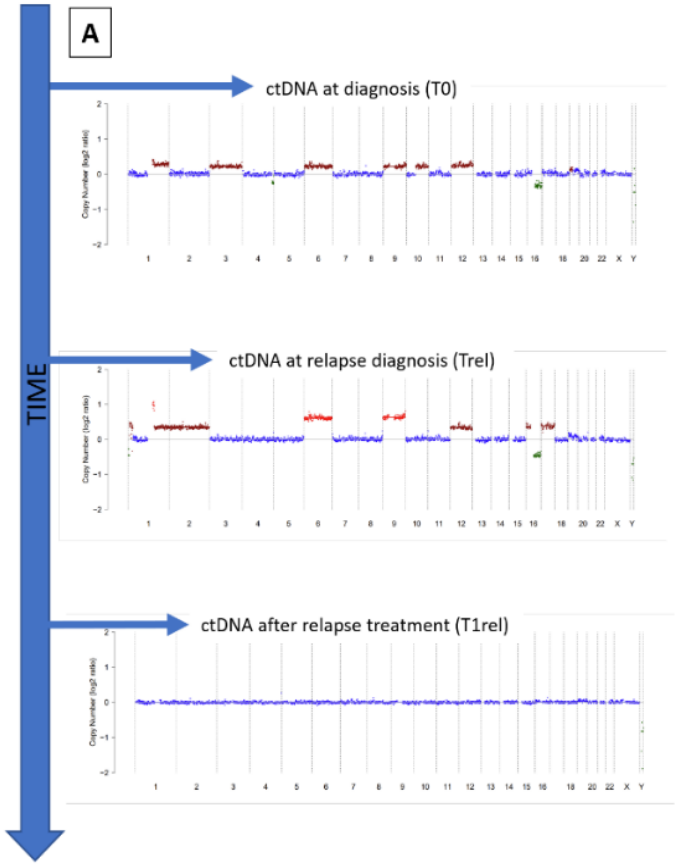
ctDNA (esordio)

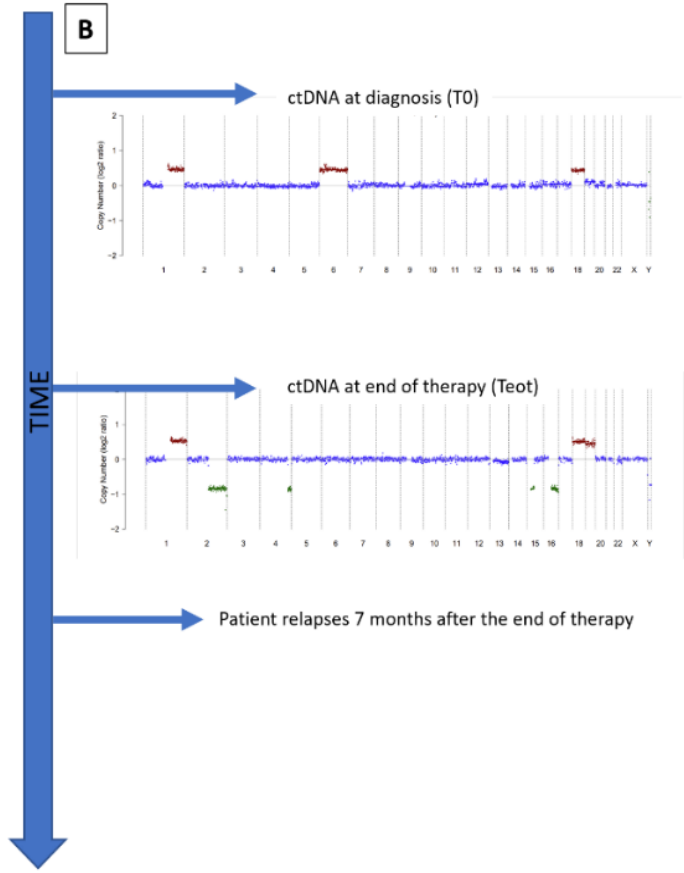


1q gain **17p loss**

Courtesy, D. Perotti

Minimal Residual Disease monitoring

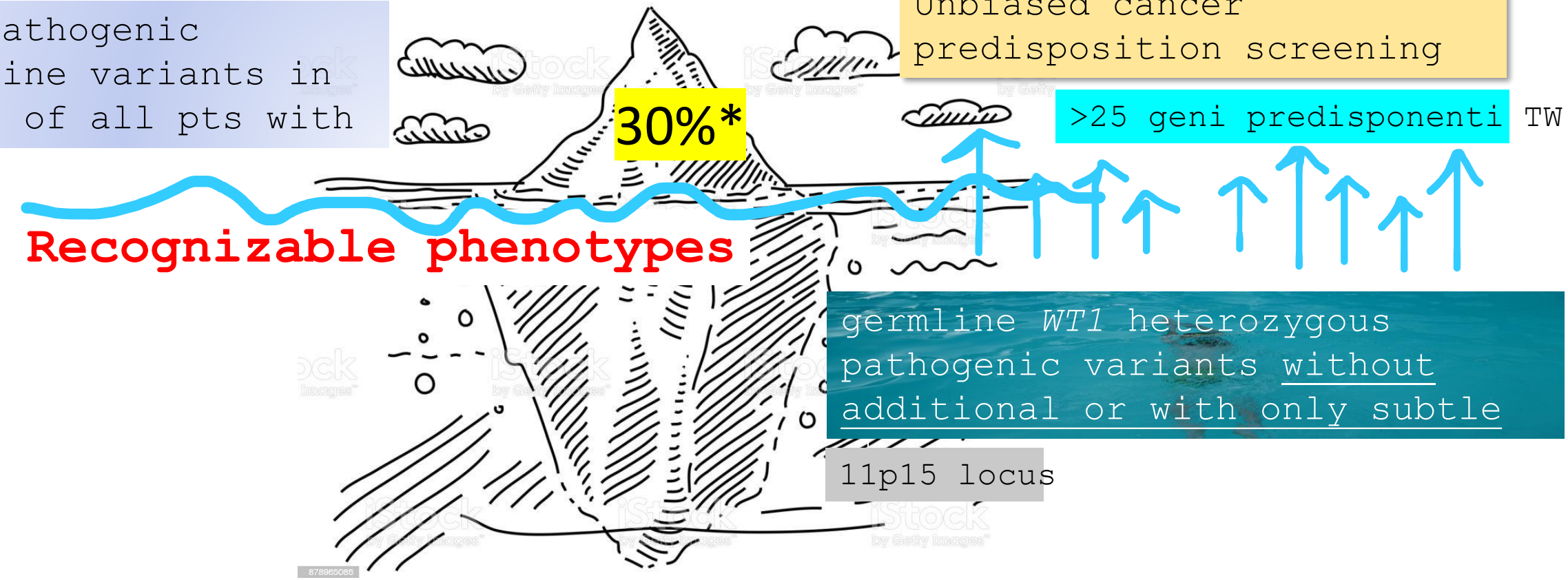




Early 1q gain/16q loss detection in liquid biopsy

Wilms tumor genetic predisposition

WT1 pathogenic germline variants in 8-14% of all pts with WT



Unbiased cancer predisposition screening

>25 geni predisponenti TW

germline *WT1* heterozygous pathogenic variants without additional or with only subtle

11p15 locus

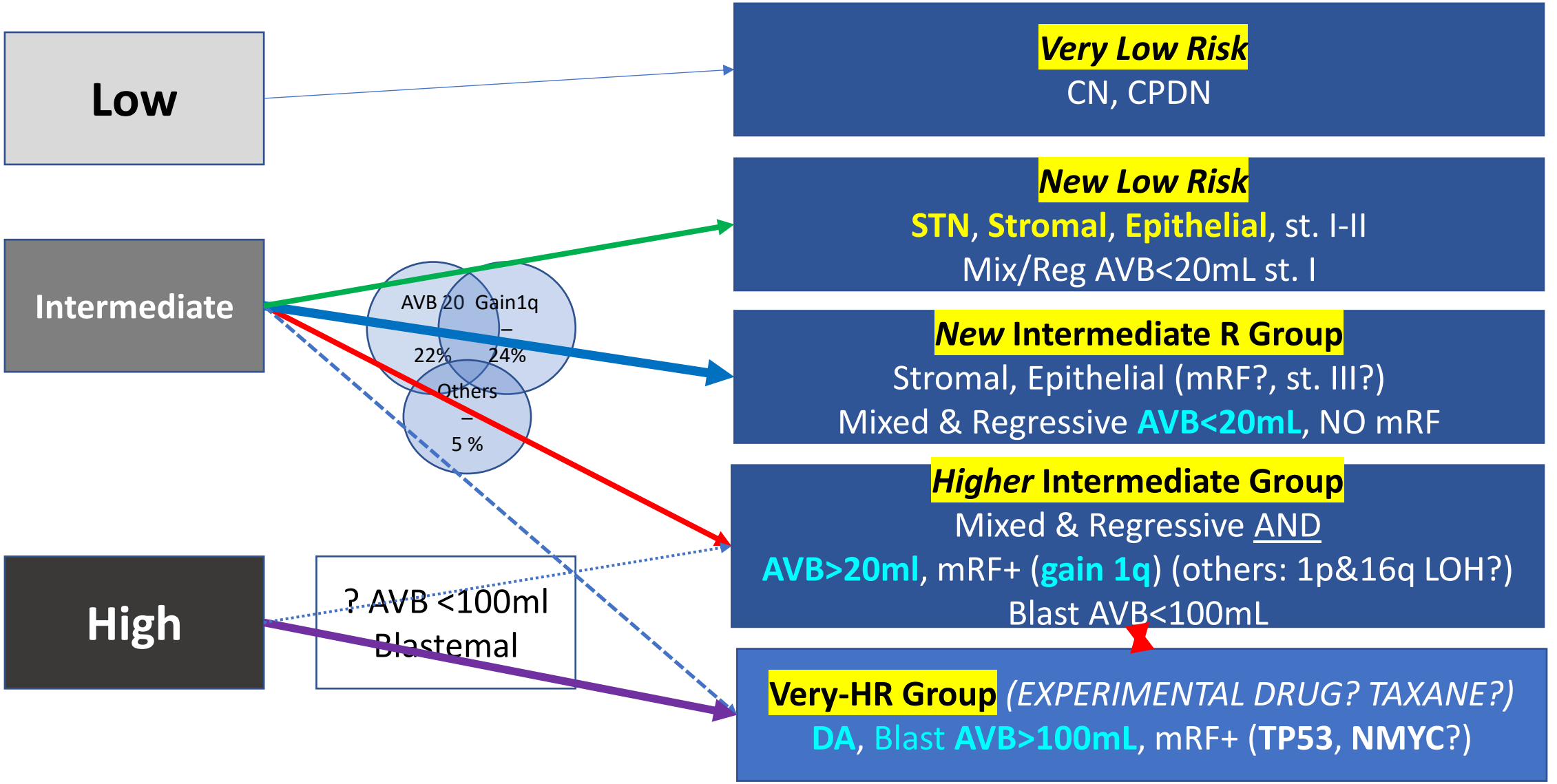
Mahamdallie. *Lancet Child Adolesc Health* 2019; Treger. *Cancer Discov* 2025; Wegert. *Genome Med* 2025; Ciceri iScience 2024

Wilms tumor genetic predisposition

variant-specific approach to treatment?[1,2]

[1]Treger et al. *Cancer Discov* 2025
[2]Spreafico et al. *Pediatr Nephrol* 2024

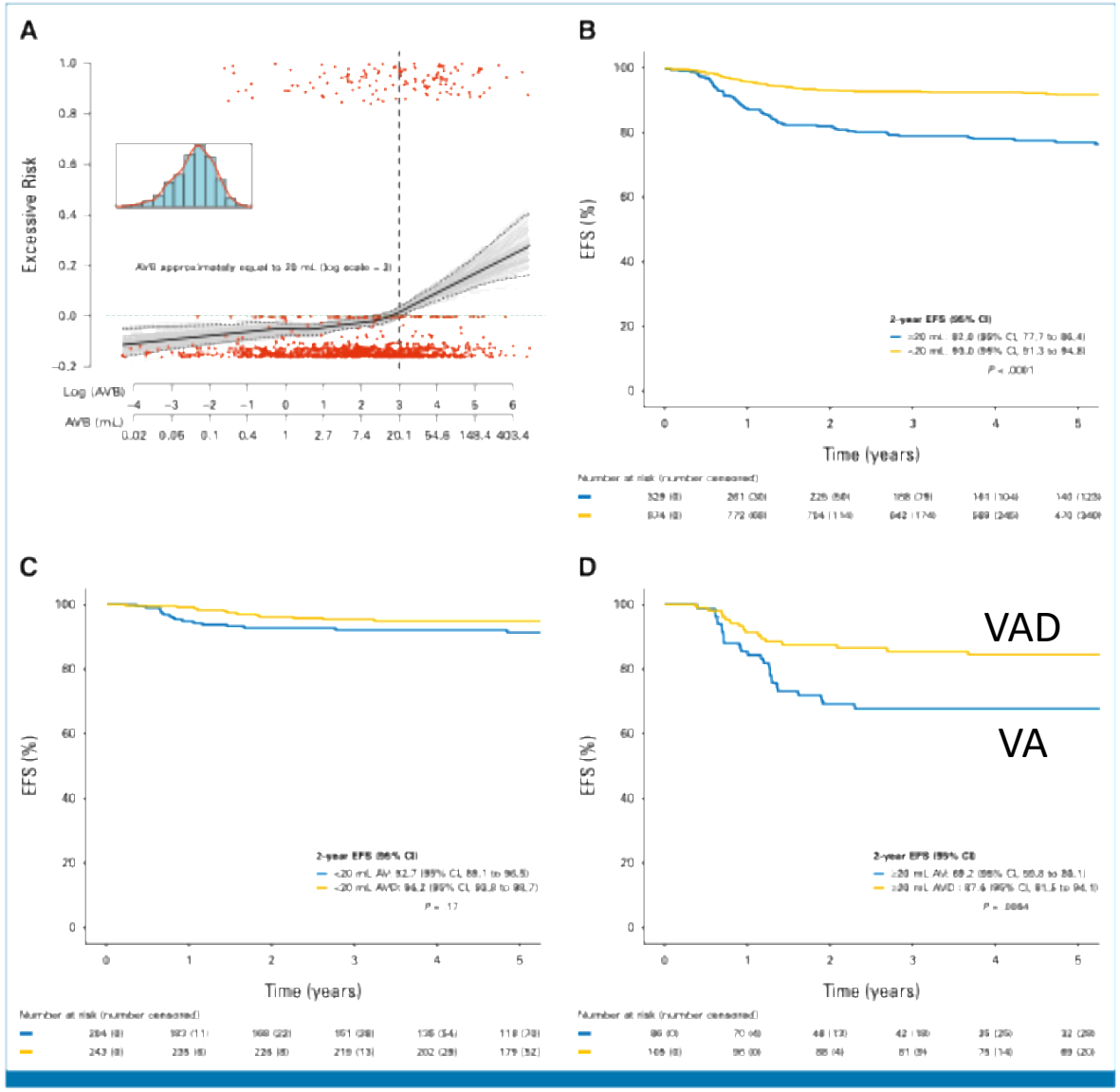
Introducing Absolute Volume Blastema (AVB) & molecular markers (mRF)



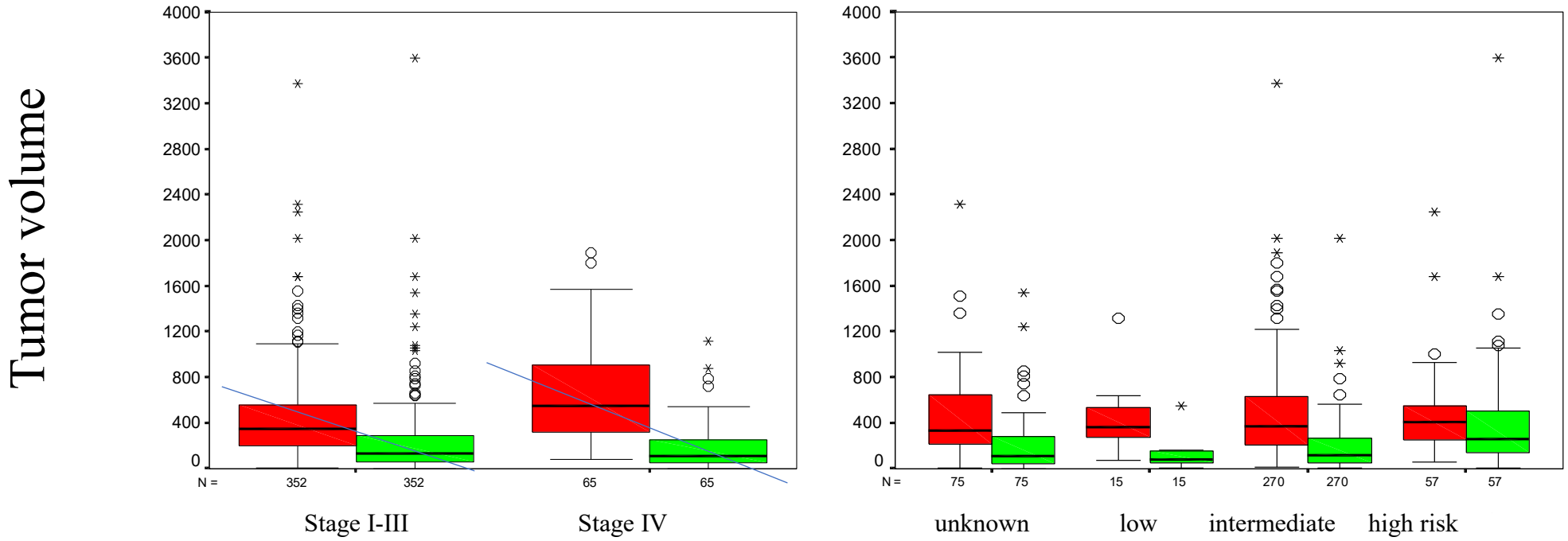
Residual Absolute Volume of Blastema as a Predictor of Clinical Outcomes in Patients With Wilms Tumor: A Report From the SIOP WT 2001 Study

Localized, intermediate risk WT

B) EFS applying the 20 ml ABV threshold
D) Post hoc EFS st II-III >20mL, according to AV vs AVD



Tumor volume & doxorubicin



Unpublished obs, SIOP

N doxo
Y doxo

nature reviews urology

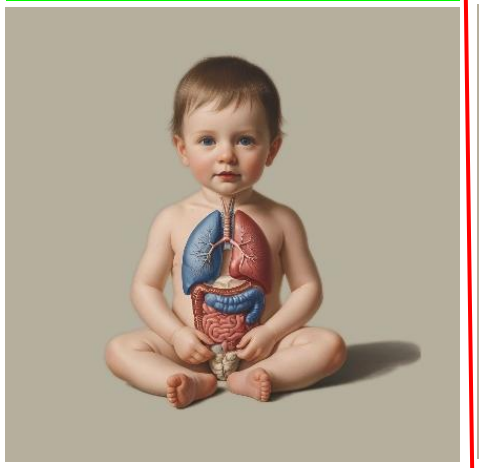
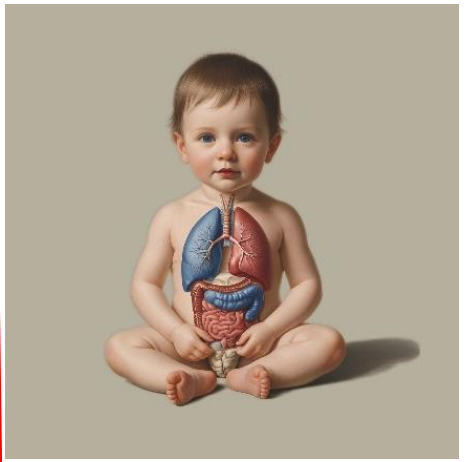
https://doi.org/10.1038/s41585-026-01126-x

Review article

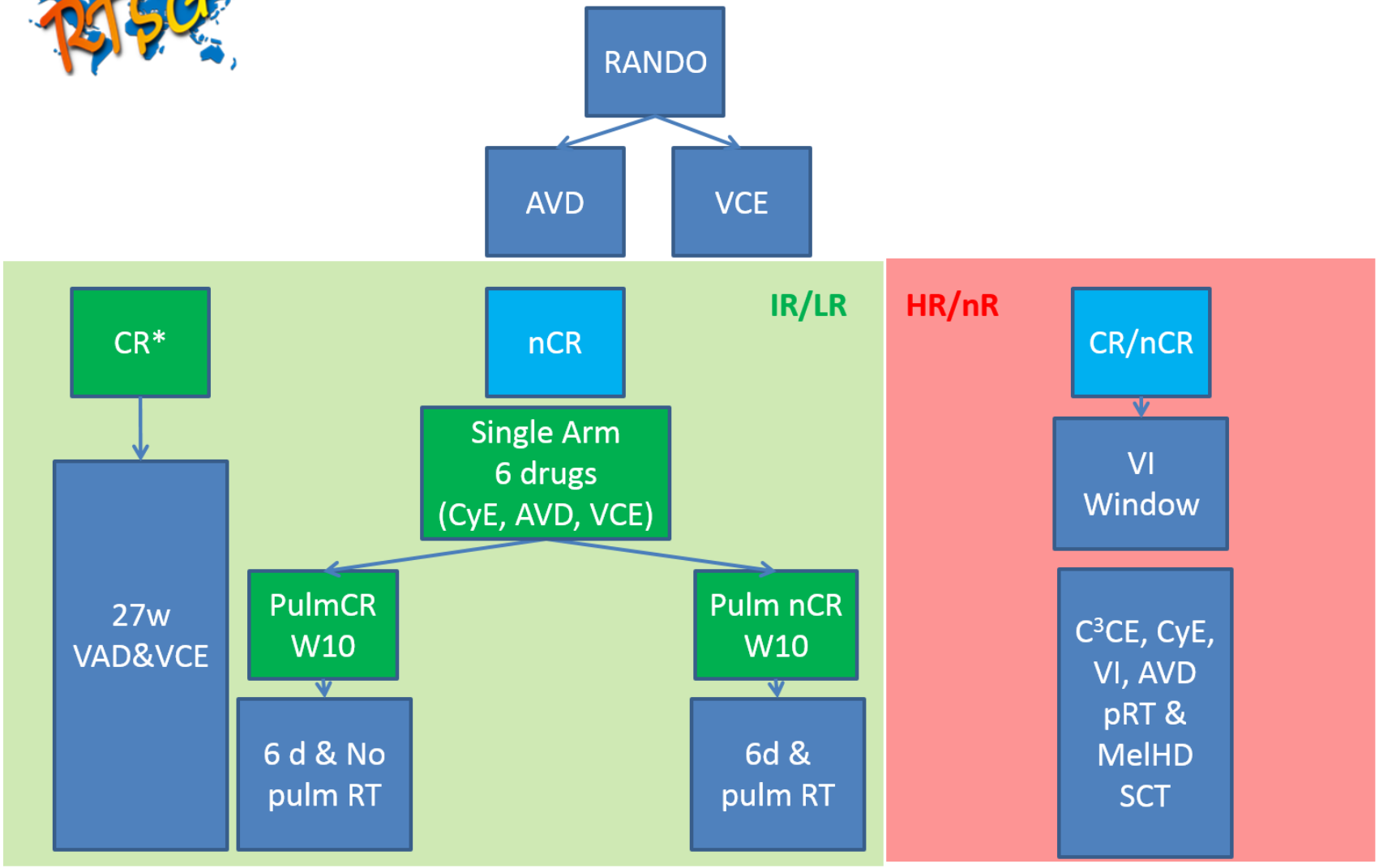
Check for updates

Long-term adverse effects of modern Wilms tumour therapies: implications for monitoring

Filippo Spreafico[1], Giovanna Gattuso[2], Marta G. Podda[2], Olga Nigro[2], Valeria Colombo[2], Sabina Vennarini[3], Antonio Mastrangelo[4], Francesca Filippi[3], Giovanni Montini[4,6], Maura Massimino[2] & Monica Terenziani[2]

Class 1. Low risk	Class 2. Moderate risk	Class 3. High risk
		
Vincristin, dactinomycin, nephrectomy	*Doxorubicin <250 mg/m2; carboplatin; etoposide; (± abdominal radiotherapy)*	*Doxorubicin >250 mg/m2; CED >6,000 mg/m2 (F); CED >4,000 mg/m2 (M); myeloablative-dose chemotherapy; abdominal e/o lung radiotherapy*
KIDNEY IMPAIRMENT	KIDNEY IMPAIRMENT	KIDNEY IMPAIRMENT
BOWEL DISORDERS	BOWEL DISORDERS	BOWEL DISORDERS
	CARDIOVASCULAR DISEASE	CARDIOVASCULAR DISEASE
	SECOND MALIGNANT NEOPLASMS	SECOND MALIGNANT NEOPLASMS
	ENDOCRINE & METABOLIC DISORDERS	ENDOCRINE & METABOLIC DISORDERS
	MUSCOLOSKELETAL ABNORMALITIES	MUSCOLOSKELETAL ABNORMALITIES
		PULMONARY DISORDERS
		GONADAL TOXICITY
		GENERAL HEALTH ISSUES

SIOP Stage IV RCT Version 1.1 Overview Plan



***if CR was achieved by surgery:**
Only if feasible in a timely fashion
all others proceed to intensification

National Coordinator, A Serra

AIEOP participating centers

Sites	Principal Investigator
OPBG – Roma (**NCC**)	Dr. A Serra
Torino	Prof. F Fagioli
Milano	Dr. M Podda
Padova	Prof. G Bisogno
Bari	Dr. F De Leonardis
Catania	Dr. A Di Cataldo
(Genova)	Dr. F Spreafico

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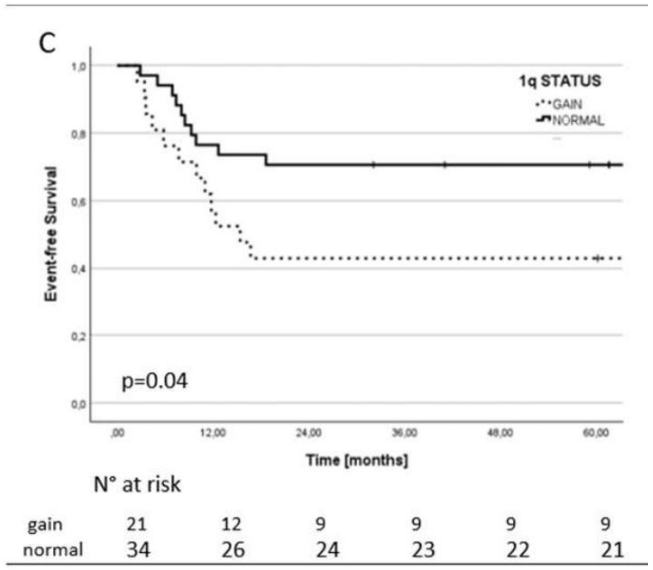
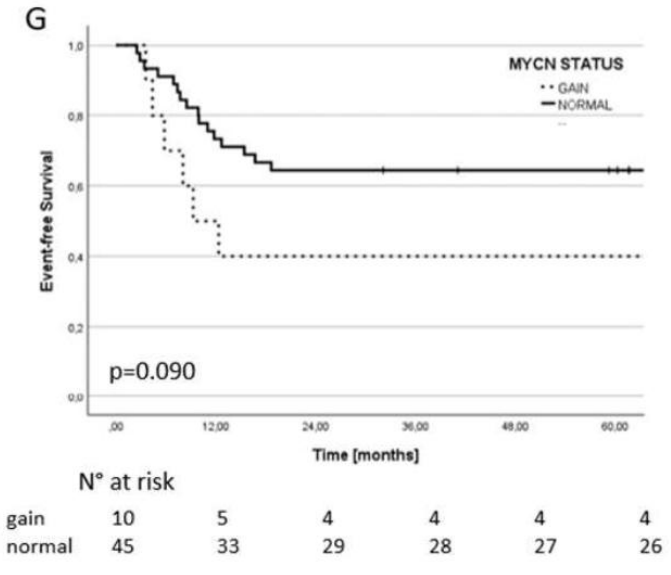
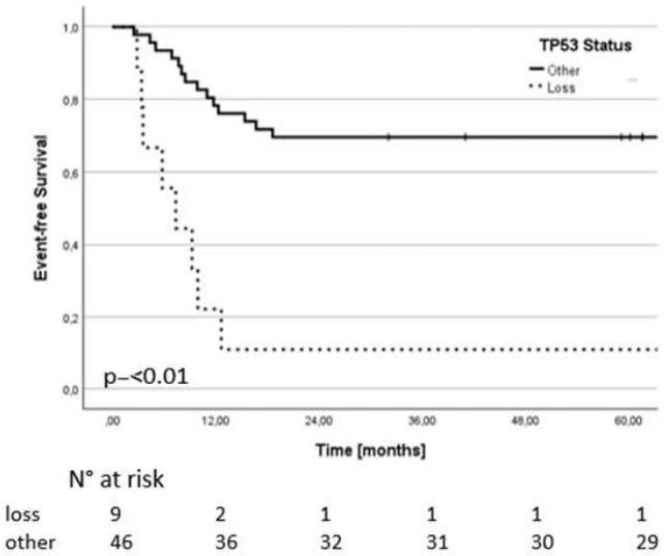
GESELLSCHAFT FÜR PÄDIATRISCHE ONKOLOGIE UND HÄMATOLOGIE GPOH

Adverse molecular *signatures*

How to target *MYCN* and *TP53* loss??







1q gain (38%) ↔ *MYCN* gain (18%) ↔ *TP53* loss (16%)

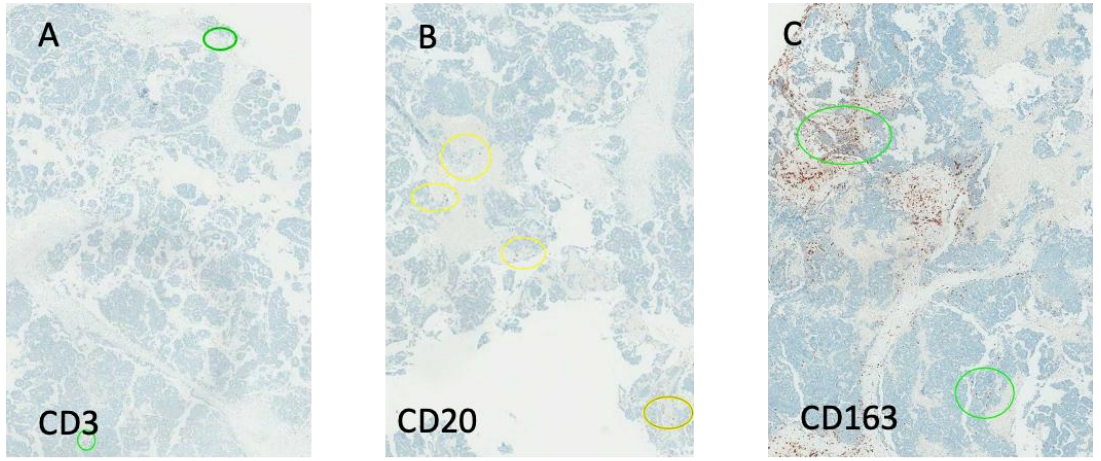
Welter et al. 2025

Williams et al. 2015

Immunotherapy potential, CHALLENGES

- Few immunogenic targets
- More immunosuppressive & inflammatory TME
- Low check-point expression
- Low mutational burden

- higher levels of neoantigens include *TP53*-mutated WTs
- High B7-H3, GP3 in DA/blastemal



Infiltrato immune (IHC) in WT relapse (AIEOP, P Collini)

SIOP RTSG Association

C Morosi

A Serra (*vice-chair*)

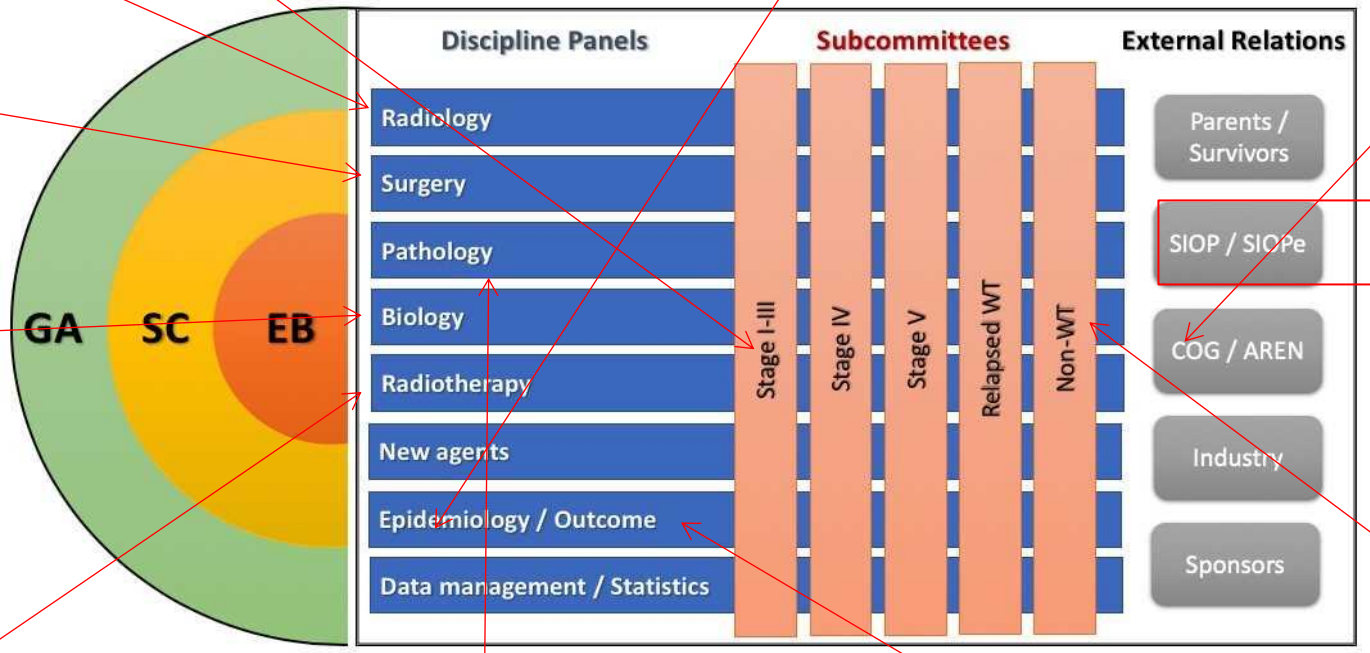
vice-Chair elected: F. Spreafico

F Spreafico

D Perotti

D Biasoni

A Crocoli



Young Investigators

A Tagarelli

D Perotti (*Chair*)

P Quarello (*co-vice-chair*)

S Vennarini

P Collini

F Diomedi Camassei

M Terenziani (PANCARE)

- Furtwängler R, Dandis R, van Tinteren H, Welter N, Vokuhl C, Vujanic G, Coulomb-L'Hermine A, Godzinski J, Schenk JP, Brisse H, Gessler M, Kager L, Melchior P, Warmann SW, Verschuur A, de Camargo B, Ramirez-Villar G, **Spreafico F**, Brok J, Chowdhury T, van den Heuvel-Eibrink MM, Graf N. Residual Absolute Volume of Blastema as a Predictor of Clinical Outcomes in Patients With Wilms Tumor: A Report From the SIOP WT 2001 Study. J Clin Oncol. 2026
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GDL AIEOP Tumori del Rene

A Di Cataldo (CT)

G Gattuso (MI)

F Melchionda (BO)

P Quarello (TO)

A Serra (Roma)

F Spreafico (GE)

A Tagarelli (TO)

A Guarina (PA, *Discovery*)

Consulenti

- P Collini (anat Patologica)
- A Crocoli (chirurgia)
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Review article

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Long-term adverse effects of modern Wilms tumour therapies: implications for monitoring

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Table 7 | Recommended lifelong kidney surveillance by risk class

Risk of kidney impairment	Class	Specific risk factor[a]	Setting	Kidney ultrasonography[b]	Proteinuria by urinalysis[c]	Office blood pressure	S-creatinine and/or eGFR; ±cystatin C	Serum electrolytes and bicarbonate[d]
Low	Class 1[e]	Nephrectomy	Paediatric oncology or general paediatrician or general practitioner	At entry into long-term follow-up monitoring, then every 2–5 years	Yearly	Yearly	Every 2–3 years (more frequently if clinically indicated)	None (if previously normal)
Medium	Class 2[e], Class 3[e]	Nephrectomy and at least one of the following: abdominal radiotherapy exposing the remaining kidney; ifosfamide; carboplatin	Paediatric nephrologist or paediatric nephrology unit	At entry into long-term follow-up monitoring, then every 2 years	Yearly	Yearly	Yearly	Once at entry into long-term follow-up monitoring, then if clinically indicated
High	WT1 pathogenetic variants[54] (any Classes[e])	WT1 mutation; genitourinary anomalies; proteinuric nephropathy; reduced nephron mass following bilateral NSS	Paediatric nephrology unit	According to kidney function and clinical data	According to kidney function and clinical data	According to kidney function and clinical data	According to kidney function and clinical data	According to kidney function and clinical data

Based on the proposed classification, using information from consensus guidelines for the management of congenital solitary kidney[17]. eGFR, estimated glomerular filtration rate; NSS, nephron-sparing surgery. [a]Note that additional risk factors may be related to survivor lifestyle or health conditions (for example, overweight, high-salt diet and glucose intolerance) or related to the tumour (for example, stromal predominance, presence of intralobar nephrogenic rests[53] or tumour location in the kidney hilum[55]). [b]With measurement of kidney length or size. [c]If proteinuria is detected, quantification by urine protein-to-creatinine ratio should be performed in the second morning urine sample. Normal values are <0.5 mg/mg until 2 years of age, and <0.2 mg/mg thereafter. [d]For monitoring tubular dysfunction, indicated in patients treated with ifosfamide. [e]Refer to the text for the risk classification of Wilms tumour survivors categorized into classes 1, 2 and 3, respectively (Box 3).