🚨Tweetorial Alert🚨

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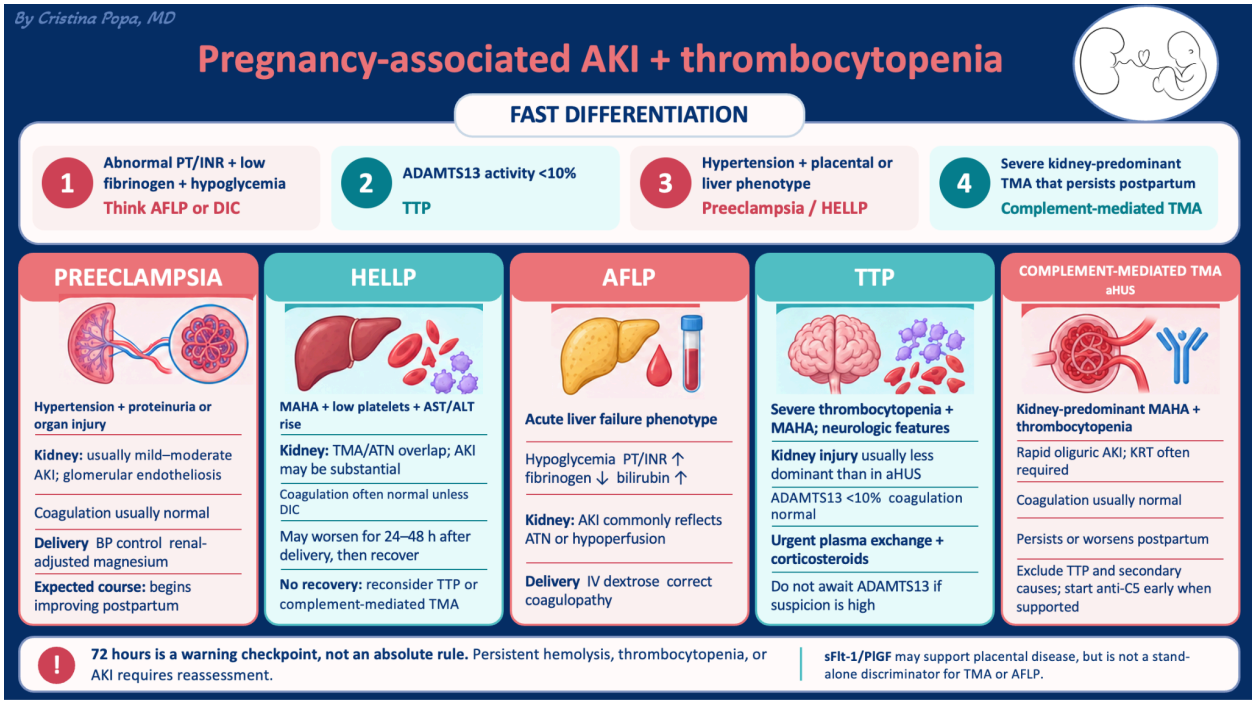
Not all preeclampsia (PE) is the same. New data on isolated PE vs PE-HELLP syndrome - and why close monitoring matters for patients' cardiovascular and kidney health

https://www.kireports.org/article/S2468-0249(26)02913-X/fulltext

1/ HELLP syndrome is usually lumped with preeclampsia as "the same disease". This nationwide French study (CONCEPTION) shows isolated PE (iPE) & PE-HELLP actually diverge in risk factors AND outcomes

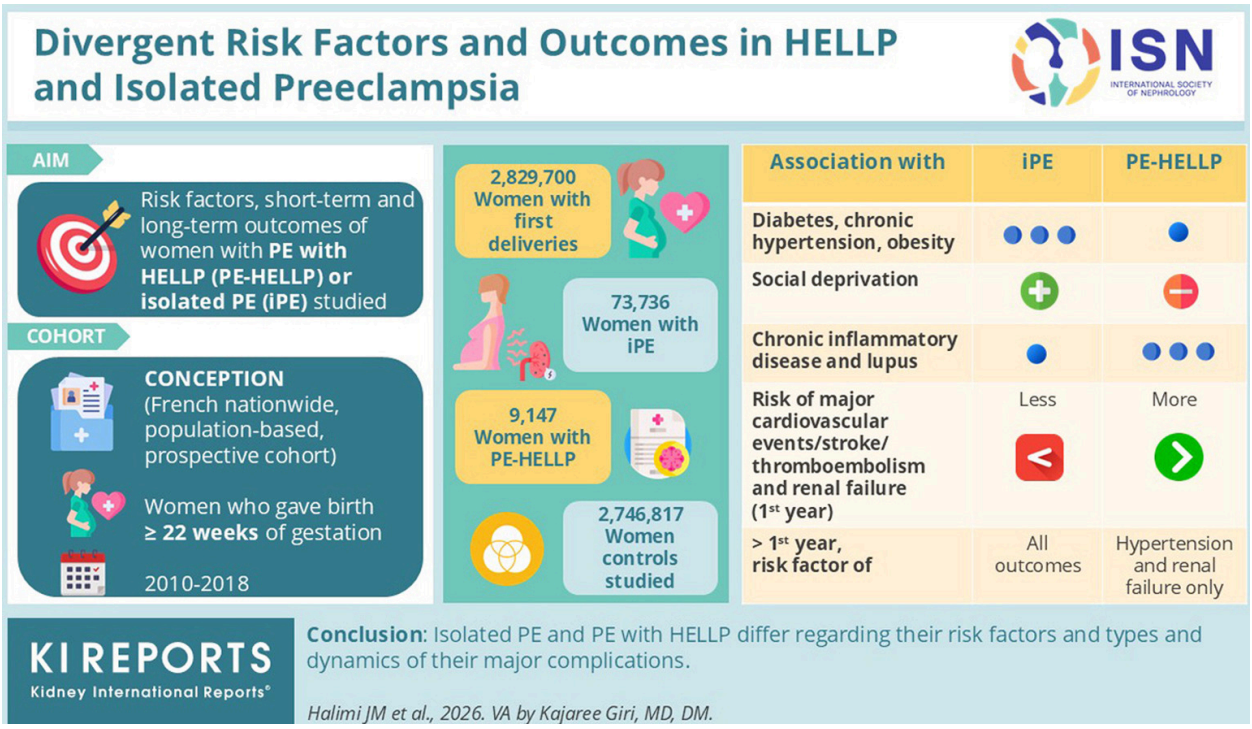
Why does it matter?



2/ PE affects millions of pregnancies; HELLP is rare (0.5-1%), but it's far more severe, with liver thrombotic microangiopathy and multiorgan injury.

Do they carry the same long-term CV/renal risk?

#VisualAbstract by @KajareeG

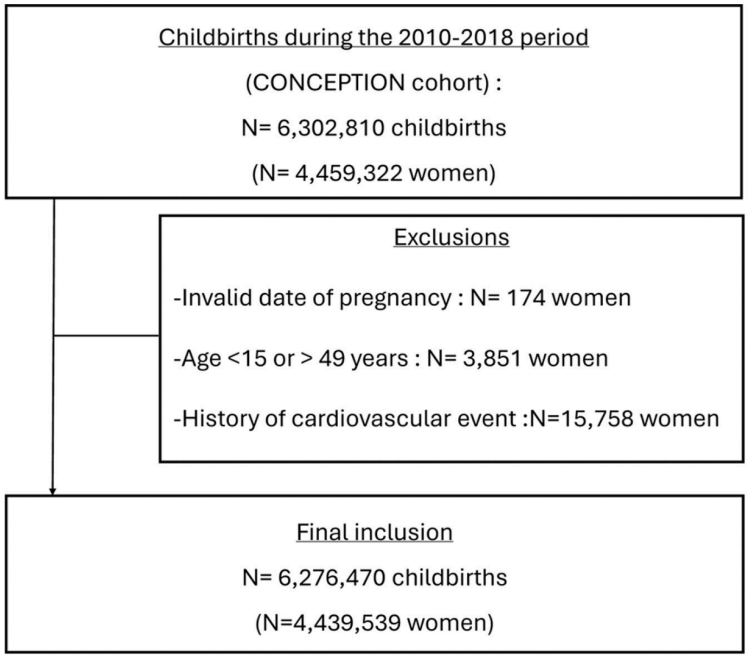


3/ Methods:

🇫🇷 CONCEPTION cohort= nationwide French health data system, 2010-2018, all first births ≥22 weeks gestation

🤰 Final population: 2,829,7000 women- 72, 736 with iPE, 9,147 PE-HELLP, 2,746,817 controls

🛑Exclusions: age <15/>49y, invalid pregnancy dates, prior CV events



NB: 137 women had 2 HELLP, 1 women had 3 HELLP

4/ 🔢 PE and PE-HELLP were identified using standard diagnosis codes
▶️Outcomes (stroke, heart disease, kidney failure, etc) were tracked separately for the first year after birth and beyond, adjusting for smoking, obesity, social deprivation, and diabetes

5/ Risk factors differ: diabetes, chronic HTN & obesity more linked to iPE
Social deprivation ⬆️risk of iPE but ⬇️risk of PE-HELLP
🔥Chronic inflammatory diseases and lupus are more linked with PE-HELLP

Table 3. Crude and adjusted odds ratios of developing preeclampsia with or without HELLP syndrome during the first pregnancy according to women's characteristics and medical history

	Crude odds ratios		Adjusted odds ratios	
Parameters	**PE without HELLP**	**PE-HELLP**	**PE without HELLP**	**PE-HELLP**
Age category				
< 20 yr	0.95 (0.91–0.99)	0.62 (0.54–0.72)	0.87 (0.84–0.91)	0.68 (0.59–0.78)
20–30 yr	Ref	Ref	Ref	Ref
30–40 yr	1.26 (1.24–1.28)	1.45 (1.39–1.51)	1.21 (1.19–1.23)	1.38 (1.32–1.44)
> 40 yr	2.64 (2.56–2.73)	2.39 (2.18–2.62)	2.13 (2.06–2.20)	2.03 (1.85–2.23)
Chronic hypertension	7.51 (7.31–7.72)	6.24 (5.77–6.74)	5.62 (5.46–5.78)	5.00 (4.61–5.42)
Diabetes	4.51 (4.27–4.75)	2.21 (1.80–2.70)	2.34 (2.21–2.48)	1.34 (1.09–1.65)
Tobacco use	0.98 (0.96–1.01)	0.78 (0.72–0.84)	0.90 (0.87–0.92)	0.74 (0.69–0.81)
Obesity	3.32 (3.25–3.40)	2.36 (2.19–2.54)	2.75 (2.69–2.82)	2.11 (1.96–2.27)
Social deprivation	1.28 (1.26–1.31)	0.84 (0.79–0.90)	1.29 (1.27–1.32)	0.92 (0.86–0.99)
Chronic kidney disease	10.00 (8.72–11.48)	5.70 (3.58–9.07)	2.73 (2.33–3.18)	1.81 (1.13–2.93)
Congenital heart defect	1.41 (1.16–1.71)	1.87 (1.16–3.02)	0.98 (0.80–1.20)	1.43 (0.89–2.31)
Chronic inflammatory disease	1.33 (1.24–1.43)	1.80 (1.53–2.13)	1.14 (1.06–1.23)	1.52 (1.26–1.82)
Systemic lupus erythematosus	2.28 (1.96–2.66)	4.53 (3.34–6.14)	1.23 (1.03–1.47)	2.01 (1.41–2.86)
HIV infection	2.23 (1.91–2.59)	2.22 (1.46–3.38)	1.31 (1.10–1.56)	1.10 (0.70–1.74)

HELLP, hemolysis, elevated liver enzymes, and low platelets syndrome; PE, preeclampsia.

5/ Within first year postpartum both iPE and PE-HELLP ⬆️risk of hypertension, stroke, MACE, VTE& CKD vs controls, but PE-HELLP hit harder:
🫀MACE aHR 6.9 vs 3.91
🧠Stroke aHR 9.71 vs 4.17

6/ Renal risk was the most striking: within 1 year, CKD risk ⬆️ 10.9-fold with iPE and 29.4-fold with PE-HELLP
Chronic dialysis risk ⬆️4.7-fold with PE vs ⬆️ 8.7-fold (PE-HELLP) vs controls

7/ After 1 year:
🔥 iPE stays a risk factor for all outcomes

🔥PE-HELLP stays a risk factor for hypertension and renal failure

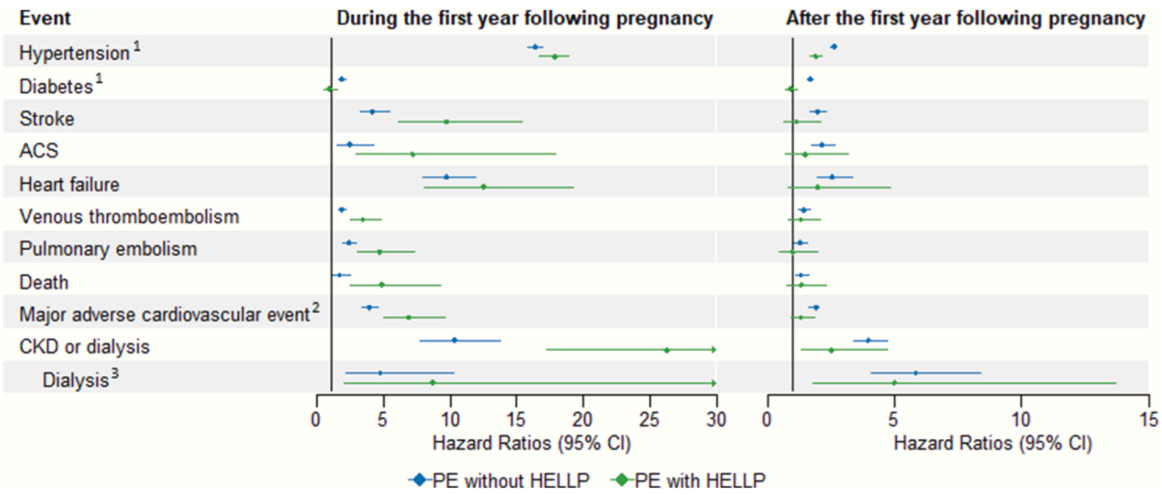


Figure 2. Adjusted hazard ratios of developing hypertension, diabetes, or cardiovascular diseases within and after the first year following a preeclampsia with or without HELLP syndrome (forest plot). [1]The models estimating the hazard ratios of developing hypertension and diabetes were performed in the subpopulations of women without history of hypertension (n = 2,786,612) or diabetes (n = 2,815,058), respectively. [2]These models were adjusted on tobacco smoking, obesity, social deprivation, and history of diabetes. [3]At least 40 dialysis sessions (to ensure that it corresponds to chronic, not acute dialysis). ACS, acute coronary syndrome; CI, confidence interval; CKD, chronic kidney disease; HELLP, hemolysis, elevated liver enzymes, and low platelets syndrome; PE, preeclampsia. Control group: pregnancies without HELLP or preeclampsia. Major adverse cardiovascular events include stroke, ACS, heart failure, and death.

8/ After 1 year:
🟧Hypertension: aHR 2.64 (iPE) vs 1.91 (PE-HELLP)
🔲CKD risk similar in both: aHR3.97 (iPE) vs 2.53 (PE-HELLP)
🔲Dialysis risk: 5.85 vs 5
🗝️Renal follow-up is key for both groups

9/ Context: prior UK/ German/Danish/Swedish cohorts found PE-doubles CKD risk, but none isolated HELLP's specific contributions. This study is the first to

quantify the gap

Study	Country	Year	Follow-up	CKD Risk (aHR/aOR)	Note
Ayansina et al.	UK	2016	2.5M person-years	**1.96 (1.45–2.56)**	No difference between gestational HTN and PE
Goetz et al.	Germany	2021	5.4 years	**~1** (similar)	Risk rises sharply with preterm delivery
Kristensen et al.	Denmark	2019	Nationwide	**~1** (similar)	Confirms German findings
Barrett et al.	Sweden	2020	20.7 years	**~1** (similar)	HELLP was included in PE — not separated
Halimi et al— **iPE**	France	2026	<1 year	**10.87 (8.26–14.29)**	HELLP excluded — isolated PE only
Halimi et al— **PE-HELLP**	France	2026	<1 year	**29.41 (19.61–45.45)**	Nearly 3x higher than isolated PE
Halimi et al— **iPE**	France	2026	≥1 year	**3.97 (3.37–4.69)**	Risk persists, but lower
Halimi et al— **PE-HELLP**	France	2026	≥1 year	**2.53 (1.35–4.72)**	Converges with isolated PE

10/ 💪 STRENGTHS: nationwide, 10 years, no loss to follow-up
🚧Limitations: dx via hospital/drug codes 👉 underdiagnosis of mild HTN/CKD; HELLP dx not biology-confirmed; censoring at 2nd pregnancy may ⬇️long-term risk estimates

11/ TAKEAWAY
🔥 iPE & PE-HELLP are NOT interchangeable- different risk profiles, different complications dynamic.
🔥Both need long-term follow-up, but PE-HELLP demands especially close monitoring

12/ If you want to know more on pre-eclampsia and the rest of TMA's in pregnancy, read the #KIReportsCommunity blogs:

https://www.kireportscommunity.org/pregnancy-kidneycare

🧵 #KIreports thread by Cristina Popa @CristinaDeReins (Romanian nephrologist)
Thank you, @MChanMD and @sophia for the feedback