Correspondence on 'Risk of systemic lupus erythematosus after immune thrombocytopenia and autoimmune haemolytic anaemia: a nationwide French study'

We read with great interest the articles by Zhu *et al*[1] and Mo *et al*[2] studying the risk of new systemic lupus erythematosus (SLE) diagnosis after immune thrombocytopenia (ITP) and autoimmune haemolytic anaemia (AIHA) diagnoses in the Taiwanese National Health Database. Zhu *et al* observed 34 SLE cases among 723 patients with incident ITP between 2000 and 2013. The 1-year and 5-year cumulative incidences were 1.9% and 4.8%, respectively.[1] Mo *et al* reported the diagnosis of 117 SLE during the follow-up of 731 patients with incident AIHA between 2005 and 2012. The 1-year and 5-year cumulative incidences were 11.3% and 17.3%, respectively.[2]

In the present study, we estimated the risk of new SLE after incident ITP or AIHA in the entire French general population. FAITH and AHEAD cohorts[3] are the French nationwide cohorts of adult patients with incident primary ITP and AIHA, respectively. These cohorts are built using validated algorithms in the French health database (*Système National des Données de Santé*), which links sociodemographic, out-hospital and in-hospital data for the entire French population (>66 million inhabitants).[4] SLE was defined by the date of first in-hospital or chronic disease (the latter being encoded by general practitioners) M32 code of the International Classification of Diseases, V.10 (ICD-10). Patients have been included between 2009 and 2017 in FAITH and between 2012 and 2017 in AHEAD. Follow-up ended in December 2018 for all patients. The cumulative incidence of SLE after diagnosis of incident primary ITP/AIHA was computed by subgroups of age and sex using the cumulative incidence risk function taking into account the competing risk of death.[5]

Among 9589 adult patients with incident primary ITP, 55.1% were women and median age was 62 years (IQR: 39–77 years). We observed 172 new diagnoses of SLE during the 39 224 patient-year follow-up. One-year and 5-year cumulative incidences were 1.03% (95% CI: 0.84% to 1.25%) and 1.89% (95% CI: 1.61% to 2.20%), respectively (table 1). The highest cumulative incidence of SLE was observed in women aged 18–45 years (1-year and 5-year cumulative incidences: 2.79% (95% CI: 2.12% to 3.60%) and 5.30% (95% CI: 4.28% to 6.46%), respectively). Among the 4609 adult patients with incident primary AIHA, 57.6% were women and median age was 72 years (IQR: 56–82 years). We observed 38 new diagnoses of SLE during the 13 233 patient-year follow-up. One-year and 5-year cumulative incidences were 0.48% (95% CI: 0.31% to 0.71%) and 0.99% (95% CI: 0.69% to 1.37%), respectively (table 1). The highest cumulative incidence of SLE was observed in women aged 18–45 years (1-year and 5-year cumulative incidences: 1.67% (95% CI: 0.75% to 3.28%) and 4.46% (95% CI: 2.53% to 7.19%), respectively).

Our study showed a low risk of SLE in patients diagnosed with primary ITP/AIHA (<2%), except in women of childbearing age (approximately 4.5%). These estimates are much lower than those measured in the Taiwanese population. Ethnical specificities may partly explain these discrepancies. Indeed, the annual incidence of SLE in Taiwan is high, estimated at 8.1 per 100 000 person-years between 2000 and 2007 using the Taiwanese Health Database.[6] SLE accounted for 21% of secondary ITPs in adult patients at ITP diagnosis in Taiwan[7] compared with 9% in France.[3] Conversely, the number of patients with ITP and AIHA in the Taiwanese study were unexpectedly low compared with our study in France.

The cumulative incidence of SLE after primary ITP/AIHA also depends on age and sex. In our study, patients were older and there was a higher men:women ratio than in the Taiwanese studies, while SLE occurred mainly in women aged 18–45 years. Of note, the cumulative incidence of SLE in patients aged 18–45 years after primary AIHA was similar in women and men.

The main limitations of our study are the possibility of misclassifications, like in other studies using similar data sources. However, the identification of patients with ITP/AIHA in the SNDS has been validated with very good positive predictive values.[8 9]

In conclusion, the cumulative incidence of SLE after the diagnosis of primary ITP/AIHA was low in our study. It mainly affects women of childbearing age after ITP diagnosis and both men and women between 18 and 45 years of age after AIHA diagnosis.

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Table 1 Cumulative incidence of systemic lupus erythematosus after incident primary immune thrombocytopenia and autoimmune haemolytic anaemia in France

	Primary ITP			Primary AIHA		
Patients	SLE/n	1-year risk, % (95% CI)	5-year risk, % (95% CI)	SLE/n	1-year risk, % (95% CI)	5-year risk, % (95% CI)
All	172/9589	1.0 (0.8 to 1.2)	1.9 (1.6 to 2.2)	38/4609	0.5 (0.3 to 0.7)	1.0 (0.7 to 1.4)
Women	150/5285	1.6 (1.3 to 2.0)	2.9 (2.5 to 3.5)	28/2653	0.6 (0.3 to 0.9)	1.2 (0.8 to 1.7)
Men	22/4304	0.3 (0.2 to 0.5)	0.6 (0.4 to 0.9)	10/1956	0.4 (0.2 to 0.7)	0.7 (0.3 to 1.3)
18–45 years	102/2844	2.0 (1.6 to 2.6)	3.8 (3.1 to 4.6)	23/699	1.9 (1.0 to 3.1)	4.2 (2.7 to 6.3)
Women	96/1910	2.8 (2.1 to 3.6)	5.3 (4.3 to 6.5)	15/418	1.7 (0.7 to 3.3)	4.5 (2.5 to 7.2)
Men	6/934	0.5 (0.2 to 1.2)	0.7 (0.3 to 1.5)	8/281	2.1 (0.9 to 4.4)	3.9 (1.6 to 7.6)
45–65 years	40/2374	0.9 (0.6 to 1.4)	1.8 (1.3 to 2.4)	9/1017	0.5 (0.2 to 1.1)	0.9 (0.4 to 1.7)
Women	31/1289	1.3 (0.8 to 2.1)	2.4 (1.7 to 3.4)	8/589	0.8 (0.3 to 1.9)	1.2 (0.6 to 2.4)
Men	9/1085	0.5 (0.2 to 1.0)	1.0 (0.5 to 1.9)	1/428	0	0.4 (0.0 to 2.3)
≥65 years	30/4371	0.4 (0.3 to 0.6)	0.7 (0.5 to 1.0)	6/2893	0.1 (0.0 to 0.3)	0.2 (0.1 to 0.5)
Women	23/2086	0.7 (0.4 to 1.1)	1.1 (0.7 to 1.7)	5/1646	0.2 (0.1 to 0.5)	0.3 (0.1 to 0.7)
Men	7/2285	0.2 (0.1 to 0.4)	0.3 (0.2 to 0.7)	1/1247	0.1 (0.0 to 0.4)	0.1 (0.0 to 0.4)

AIHA, autoimmune haemolytic anaemia; ITP, immune thrombocytopenia; SLE, Systemic lupus erythematosus.

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