

Mapping opportunities for the earlier diagnosis of psoriasis in primary care: a large retrospective analysis of general practice electronic health records in the United Kingdom.

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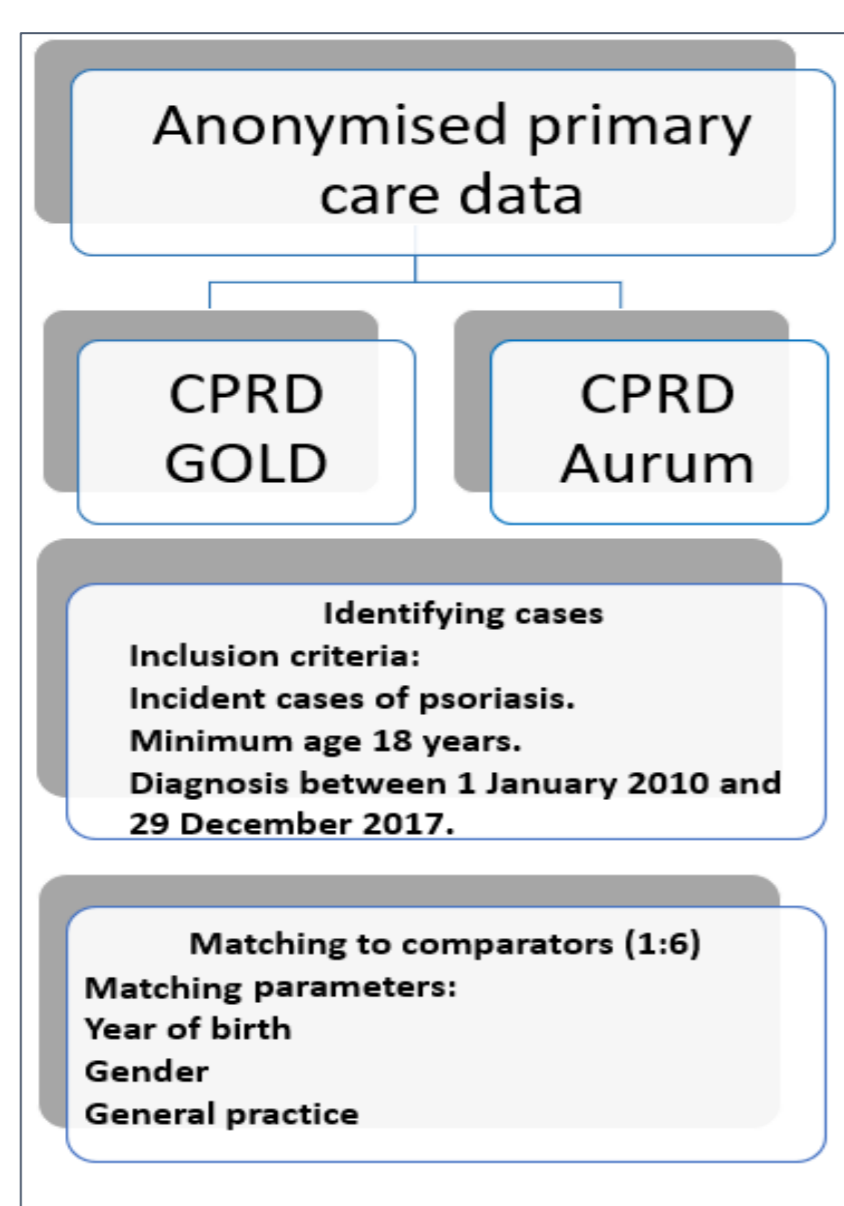
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Background/Aims

- Psoriasis has a variable clinical presentation which overlaps with other skin conditions making the diagnosis a challenging task.
- To our knowledge, this is the first study to investigate potential missed opportunities for an earlier diagnosis of psoriasis.
- The aim of this work was to examine the electronic health records (EHR) of individuals with and without psoriasis and to investigate whether a missed opportunity for an earlier diagnosis of psoriasis could be identified.

Methods

1. Cohort: Using the Clinical Practice Research Datalink (CPRD).



2. Data: Healthcare events of interest.

Differential diagnosis	Clinical features	Prescribed medications
<ul style="list-style-type: none"> Pityriasis rosea Seborrheic dermatitis Eczema. Tinea capitis Candida skin infections 	<ul style="list-style-type: none"> Skin rash Dry skin Skin texture changes Itching 	<ul style="list-style-type: none"> Topical corticosteroids Topical antifungal medications.

3. Analysis.

We calculated annual incidence rate (IR) and incidence rate ratio (IRR) with 95% confidence interval (95% CI) for ten years before the index date and compared results between patients with and without psoriasis.

Results

1. Demographic characteristics of the cohort

Total		Case (n= 17,320)	Control (n= 99,320)
sex	male	8,282 (47.82 %)	47,491 (47.82 %)
	female	9,038 (52.18 %)	51,829 (52.18 %)
Age at index (years)	Median (IQR)	51 (36-64)	50 (36-64)
Socioeconomic status IMD score	1 (lowest)	4,020 (23.21)	23,997 (24.16)
	2	3,830 (22.11)	22,405 (22.56)
	3	3,422 (19.76)	19,553 (19.69)
	4	3,343 (19.30)	18,775 (18.90)
	5 (highest)	2,695 (15.56)	14,533 (14.63)

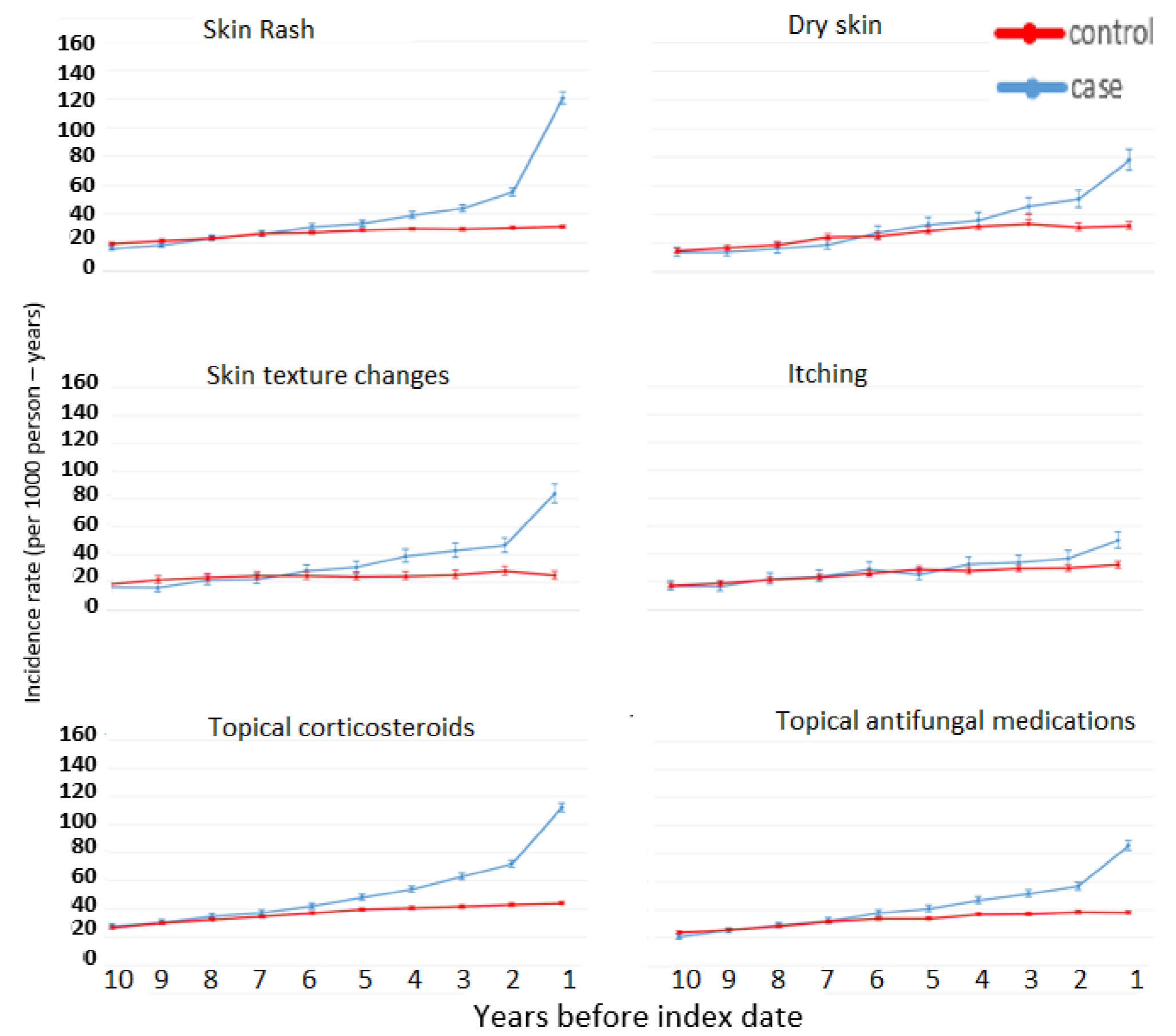
2. Frequency of GP consultations.

Years prior to index date	cases	controls
4–5 years prior to index date: median (IQR)	7 (2-13)	5 (2-12)
3–4 years prior to index date : median (IQR)	8 (3-15)	6 (2-12)
2–3 years prior to index date : median (IQR)	8 (3-16)	6 (2-13)
1–2 years prior to index date : median (IQR)	10 (5-18)	8 (4-15)
0–1 year prior to index date : median (IQR)	11 (5-19)	8 (4-15)

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3. Incidence rate of clinical events.

A. Annual incidence rate of clinical events from 10 years prior to index date. Bars are 95% Cis.



B. Incidence rate ratios of clinical events recorded 6 months, 1, 3 and 5 years before index date.

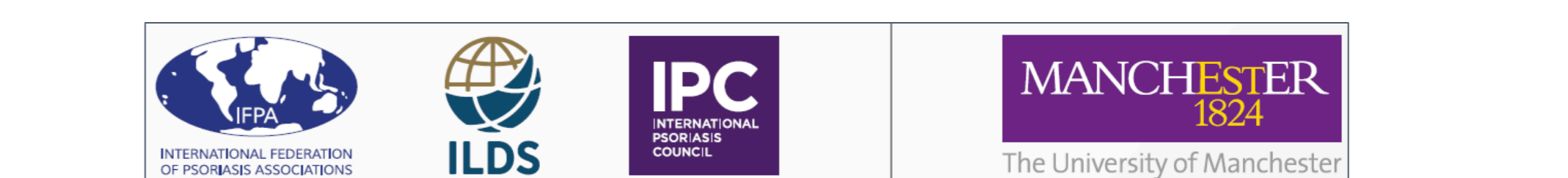
Clinical events	IRR (95% CIs) 6 months	IRR (95% CIs) 1 Year	IRR (95% CIs) 3 Year	IRR (95% CIs) 5 Year
Seborrheic dermatitis	2.34 (1.82-3)	1.97(1.65-2.35)	1.49(1.33-1.66)	1.27(1.33-1.38)
Eczema.	2.23 (1.99 - 2.5)	1.90(1.76 -2.05)	1.41(1.35-1.48)	1.23(1.18-1.28)
Tinea capitis	2.52(2.09-3.03)	1.99(1.74-2.27)	1.43(1.32-1.56)	1.25(1.17-1.34)
Candida skin infections	1.46 (1.32-1.74)	1.44(1.29 -1.61)	1.28(1.20 -1.37)	1.15(1.08-1.21)
Pityriasis rosea	7.82 (4.09-14.95)	3.24 (2.24-5.27)	1.71(1.28-2.27)	1.38 (1.09 -1.75)
Dry skin	2.05 (1.54 -2.72)	1.52 (1.24-1.86)	1.38 (1.22 -1.57)	1.8 (1.06-1.30)
Rash	4 (3.62 - 4.41)	2.71 (2.53-2.92)	1.63 (1.55 -1.71)	1.32 (1.27 -1.38)
Skin texture changes	2.17 (1.69-2.29)	1.55 (1.39 -1.37)	1.23 (1.14-1.31)	1.13 (1.06 -1.2)
Itching	1.39 (1 -1.93)	1.54 (1.22 -1.94)	1.26 (1.10-1.45)	1.18 (1.05 -1.32)
Topical corticosteroids	2.58 (2.39-2.79)	1.97 (1.88 -2.07)	1.46 (1.42 -1.5)	1.24 (1.21 -1.27)
Topical antifungal treatment	2.32 (2.08-2.59)	1.92 (1.78 -2.07)	1.43 (1.36-1.49)	1.24(1.20-1.29)

- Psoriasis patients were eight-times more likely to be diagnosed with pityriasis rosea at six months before the index date than those without psoriasis.
- Psoriasis patients were four times more likely to report skin rash than those without psoriasis at six months before index date.
- Psoriasis patients were prescribed topical corticosteroids or topical antifungals in the year before diagnosis twice as often as those without psoriasis.

Conclusion

Missed opportunities for earlier diagnosis of psoriasis were identified from the electronic health records of patients with psoriasis. GPs may need additional training on how to diagnose psoriasis, thereby avoiding a potentially detrimental delay in establishing an appropriate treatment regimen.

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