Heart-Centered Psoriasis Care: Acitretin and Cyclosporine Insights for Cardiovascular Vigilance

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INTRODUCTION

- **Psoriasis**, a common chronic skin disorder, affect 2-3% of population worldwide[1], **poses a significant challenge to patients and clinicians** due to its complex pathogenesis and variable clinical manifestations[2]. Managing psoriasis in individuals at heightened cardiovascular risk demands particular attention and consideration[3].
- Cyclosporine stands out as a potent immunosuppressive agent that has demonstrated efficacy in controlling psoriatic symptoms[4], while acitretin, a synthetic retinoid, has a long-standing history of use as a cornerstone therapy for moderate to severe psoriasis. It offers an alternative approach for patients unresponsive to or intolerant of other systemic treatments[5].
- This scoping review aims to provide insights into navigating the therapeutic landscape of psoriasis treatment with cyclosporine and acitretin in individuals and the effect of these medications on cardiovascular risk factors.

METHODS

- Following PRISMA guidelines.
- **Searching databases:** PubMed, ScienceDirect, Cochrane Library, and Wiley Online Library.
- **Search limit:** English publications between 2013-2023
- **Keywords:** psoriasis, psoriasis arthritis, acitretin, cyclosporine, safety and effects, cardiovascular events.
- Screening of publications occurred initially through titles and abstracts, followed by a thorough review of full-text articles.

CONCLUSIONS

- The ***relationship*** between acitretin and CEs ***is complex*** highlights the need for further exploration to elucidate the intricate interplay.
- The findings underscore the importance of ***careful consideration*** and ***individualized treatment*** approaches based on disease severity and patient characteristics in managing psoriasis.
- Further research is warranted to elucidate the nuanced relationship between these medicines and cardiac outcomes in this patient population.

RESULTS

The review included 10 publications, comprising 853,984 psoriasis patients. ***Conflicting evidences revealed*** among acitretin treated patients:

- Findings from some studies suggest a potentially favorable cardiovascular profile among patients with acitretin[9].
- Longitudinal surveys unveil an elevated cardiac event (CE) risk compared to alternative therapies[10].
- Insights from retrospective and prospective cohorts reveal no significant alteration in cardiac event risk[8-10].

Study Design	Control group	Patient (#)	Age (y, mean ± SD)	Disease duration (y, mean ± SD)	Time-points	Caridac Events Group	Cardiac-realted Outcomes n (%)	Authors, years
Retrospective Cohort		21	70.5 ± 4.6	30.3 ± 18.3	Week 36	Cardiovascular Events	1 (4.8)	Harr et al., 2022[6]
		62	71.3 ± 5	22.1 ± 15.8	Week 52	Cardiovascular Events	0 (0.0)	Piaserico et al., 2014[7]
Prospective Cohort	Methotrexate	1,932	52 ± 15	17 ± 13	10 years (2008-2018)	Cardiovascular Events	No effect: 18 (IR=23, 14-36)	Daudén et al., 2020[8]
Retrospective Cohort	Not MTX, not RET	7,328	11-80 years	n/a	Week 520	Cardiovascular Events	Reduced risk in PsO patients (HR=0.5, 0.26–0.83)**, while having no effect on PsA patients (HR=0.6, 0.23–1.82)	Chin et al., 2013[9]
						Cerebrovascular events	No protected effect in both PsO and PsA patients PsO: HR=0.7 (0.35–1.31); PsA:HR= 0.8 (0.26–2.67)	
Retrospective Cohort	Other therapies	4,717	50.2 ± 15.3	n/a	Week 260	CV death	No elevated effect (HR=1.4, 0.93–2.04)	Ahlehoff et al., 2015[10]
						Major CVEs	Increased risk (HR=1.8, 1.10–2.96)*	

A complex landscape of cyclosporine therapy and cardiovascular outcomes in patients with severe psoriasis:

- Some studies have indicated a lack of protective effects against cardiac events[10, 12]
- Others have highlighted potential elevated risks associated with cyclosporine use, particularly in certain subsets of patients[8, 11]. Notably, elderly patients receiving cyclosporine treatment showed cases of non-cardiovascular events over extended periods, suggesting a need for cautious monitoring[7].

Study Design	Control group	Patient (#)	Age (y, mean ± SD)	Disease duration (y, mean ± SD)	Time-points	Caridac Events Group	Cardiac-realted Outcomes n (%)	Authors, years	N°
Retrospective Cohort		36	71.3 ± 5	22.1 ± 15.8	Week 52	Cardiovascular Events	0 (0.0)	Piaserico et al., 2014[7]	85
		755	46.3 ± 16.0	n/a	Week 144	CV death	44 (5.8)	Hong et al., 2021[11]	177
						Other CVEs	1 (0.1)		177
						Stroke	16 (2.1)		177
Retrospective Cohort	Mild disease	823,661	46.3 ± 16.0	n/a	Week 144	Major CVEs	Increased risk (HR= 2.1, 1.64–2.71)***	Hong et al., 2021[11]	177
Prospective Cohort	Methotrexate	1,816	52 ± 15	17 ± 13	10 years (2008-2018)	Cardiovascular Events	Increased risk (IRR= 6.5, 95% CI, 2.9-16.7)***	Daudén et al., 20207[8]	125
Retrospective Cohort		10,451	64.5 ± 13.4	n/a	Week 260	Cardiovascular Events	No protected risk (HR=0.4, 0.09-1.45)	Curtis et al., 2016[12]	141
						Myocardial infarction	No protected risk (HR=0.3, 0.04-1.92)		141
						Stroke	No protected risk (HR=0.6, 0.08-3.98)		141
Retrospective Cohort	Other therapies	3,205	50.2 ± 15.3	n/a	Week 260	CV death	No elevated effect (HR=1.1, 0.40–2.97)	Ahlehoff et al., 2015[10]	40
						Major CVEs	No elevated effect (HR=1.1, 0.26–4.27)		40

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