Identifying and managing psoriasis-associated comorbidities: the IMPACT research programme

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Scientific summary

The IMPACT research programme

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Scientific summary

Background

Psoriasis is a common, lifelong inflammatory skin disease, which can range from limited disease involving a small body surface area to extensive skin involvement. It is associated with high levels of physical and psychosocial disability and a range of comorbidities, and it is currently incurable.

Common comorbidities of psoriasis include psoriatic arthritis, Crohn's disease, metabolic syndrome, non-alcoholic fatty liver disease, anxiety and depression. In addition, people with psoriasis often have conditions associated with an increased risk of cardiovascular disease, such as obesity, hypertension, hyperlipidaemia and type 2 diabetes. Importantly, healthy lifestyle behaviours that can reduce cardiovascular disease risk (such as weight loss and smoking cessation) may also reduce the severity of psoriasis flares in some individuals.

In the few years prior to initiation of the Identification and Management of Psoriasis Associated ComorbidiTy (IMPACT) programme, the findings of a number of studies supported the idea of a direct association between psoriasis and the development of cardiovascular disease, with some estimating the relative risk of cardiovascular disease to be tripled in those with severe psoriasis compared with the non-psoriasis population.

Aims and intended outputs

The programme of work set out to identify optimal methods of investigating and managing psoriasis-related comorbidities. The aims were to:

- confirm which patients with psoriasis are at highest risk of developing additional long-term conditions and identify service use by and costs to patients
- apply knowledge about risk of comorbid disease to the development of targeted screening services to reduce risk of further disease and to investigate how this affects patient experience
- learn from patients with psoriasis about helpful and unhelpful coping (self-management) strategies
- identify the barriers to professionals providing patients with support for lifestyle behaviour change
- develop patient self-management resources and staff training packages to improve the lives of people with psoriasis.

Burden of psoriasis (workstream 1)

Methods

Workstream 1 comprised three studies. The first (study 1.i) included a systematic review of the prevalence and incidence of psoriasis and a systematic review of published economic evaluations of psoriasis management. The second (study 1.ii) was a population cohort study that used a primary care database from the UK (the Clinical Practice Research Datalink) and investigated the risk of major cardiovascular events in patients with psoriasis. Finally, an economic model of care costs (study 1.iii) was undertaken (reported as part of workstream 5 findings).

Key findings

Study 1.i confirmed that psoriasis is a common disease that is less common in children and more common in adults. Prevalence rates showed a worldwide geographic variation. The incidence of psoriasis in the UK is estimated to be 140 per 100,000 person-years. The disease is uncommon before the age of 9 years.

In adults the incidence is estimated to be between 1.30% and 2.60%, with some studies suggesting an increasing trend in the prevalence of the disease with age (Gelfand JM, Weinstein R, Porter SB, Neimann AL, Berlin JA, Margolis DJ. Prevalence and treatment of psoriasis in the United Kingdom: a population-based study. *Arch Dermatol* 2005;**141**:1537–41). There was no agreement about whether or not the prevalence of psoriasis differed between men and women; however, most studies indicate no difference (Gelfand *et al.* 2005; Seminara NM, Abuabara K, Shin DB, Langan SM, Kimmel SE, Margolis D, *et al.* Validity of The Health Improvement Network (THIN) for the study of psoriasis. *Br J Dermatol* 2011;**164**:602–9).

The economic systematic review included 37 studies that mainly evaluated individual therapeutic agents rather than packages of care. Most papers reported modelling studies, synthesising data from several sources. The review identified a number of key areas of uncertainty and, overall, there was a lack of high-quality head-to-head clinical comparisons of different interventions. Repeated use of previous model structures was commonplace. The costs and cost-effectiveness of treatments were uncertain.

The population cohort study (study 1.ii) found that adults with psoriasis have more prevalent comorbid conditions associated with cardiovascular disease. However, accounting for other established risk factors for cardiovascular disease, psoriasis itself was not directly associated with the short- to medium-term risk of major cardiovascular events. Despite this, the co-occurrence of inflammatory arthritis and psoriasis is an independent risk factor for major cardiovascular events.

Screening people with psoriasis for comorbidities and risk (workstream 2)

Methods

Workstream 2 comprised three studies. Study 2.i recruited 13 general practices and 287 patients to investigate whether or not screening for cardiovascular disease risk factors in primary care could identify previously undetected risk factors and so influence their estimated prevalence in patients with psoriasis. The study assessed whether or not the prevalence of screen-detected cardiovascular disease risk factors or estimated cardiovascular disease risk varied by age, psoriasis severity and/or the presence of psoriatic arthritis and explored the clinical benefits of normalising modifiable risk factors.

Arterial stiffness is an important surrogate marker of cardiovascular disease and can be assessed non-invasively by measuring pulse wave velocity. Study 2.ii assessed whether or not pulse wave velocity was related to the severity of psoriasis, the presence of psoriatic arthritis and/or the age at onset of psoriasis in a subset of the participants in study 2.i. Patients attended their own general practice surgery or a local dermatology research department for pulse wave velocity measurement.

Study 2.iii aimed to identify which communication techniques are most useful and/or effective in supporting psoriasis patients to understand the risks associated with comorbidities and the ways to minimise risk through health-related behavioural strategies. This included a qualitative study nested in the primary care screening study of cardiovascular disease risk factors and an online survey with a community-based sample of 217 people with psoriasis.

Key findings

Study 2.i found that screening detected one or more cardiovascular disease risk factors in 48% of participants. The proportion of patients with screen-detected cardiovascular disease risk factors was unrelated to age, psoriasis severity or the presence of self-reported psoriatic arthritis. When known and screen-detected risk factors were considered, hypertension was more prevalent in patients with psoriasis. There was suboptimal management of one or more of the cardiovascular disease risk factors in over half the participants treated for known cardiovascular disease risk factors.

Study 2.ii found that there was no significant relationship between arterial stiffness and either the severity of psoriasis or age at onset after adjusting for age.

Study 2.iii found that opportunities to support patients' understanding of risk and strategies to reduce risk were missed in consultations for cardiovascular disease risk communication. Most practitioners did not feel equipped to provide tailored, person-centred risk communication and lifestyle behaviour change support. In addition, the way practitioners frame health risk messages may affect behavioural intentions in people with psoriasis, depending on the health benefit being emphasised.

Coping and stressors for people with psoriasis (workstream 3)

Methods

Workstream 3 included two studies. Study 3.i aimed to learn about the coping strategies used by individuals who were currently functioning well and how people seek (or do not seek) help from health-care professionals and services. Study 3.ii aimed to explore the views and experiences of general practitioners about their own practice of psoriasis management. In-depth interviews were conducted with purposive samples of people with psoriasis (study 3.i) and general practitioners (study 3.ii).

Key findings

People living with psoriasis face strong daily demands from physical, psychological and social challenges, although these were perceived to be unacknowledged in health-care consultations. Participants gave accounts of poor experiences in the management of psoriasis by health-care practitioners and reported disengaging from consulting about psoriasis or seeking alternative opinions and treatments outside formal health-care services. Participants used a variety of coping/self-care goals and strategies.

General practitioners reported assessment and management of psoriasis that was not in line with National Institute for Health and Care Excellence (NICE) recommendations. Although some general practitioners recognised psoriasis as a complex condition, most viewed it primarily as a skin complaint. The general practitioners interviewed did not view or manage psoriasis as a long-term condition that would have included regular monitoring, review and appropriate referral as they would other long-term conditions seen in primary care. General practitioners reported minimising the potential emotional and social effects of the condition on people's lives in consultations. However, most general practitioners indicated low levels of expertise and confidence to manage psoriasis, citing lack of undergraduate and postgraduate training in dermatology.

Barriers faced by professionals to effective management of people with psoriasis (workstream 4)

Methods

Workstream 4 aimed to identify the barriers to effectively supporting patients with psoriasis to develop and/or maintain a healthy lifestyle through four inter-related studies.

Study 4.i used content analysis of relevant core training competencies to assess the extent to which lifestyle behaviour change skills are included in the postgraduate training curricula of relevant health-care professionals. Study 4.ii used in-depth qualitative interviews to assess the experiences of dermatologists, specialist nurses and general practitioners in managing psoriasis and providing patients with support for lifestyle change and barriers to doing this in practice. Study 4.iii was an observational study to investigate whether or not patient waiting rooms currently promote appropriate lifestyle behaviour change information for psoriasis patients. Study 4.iv conducted a survey of dermatology specialist nurses to assess their perceived training needs in relation to supporting behaviour change for people with psoriasis and to support planning of the level and type of training required for dermatology specialist staff.

Key findings

Study 4.i found that there was a lack of systematic training for practitioners to develop appropriate skills and knowledge to manage patients with psoriasis. Study 4.ii found low levels of knowledge and skills in health-care professionals in terms of managing psoriasis as a complex, long-term condition and addressing lifestyle behaviour change. There was a lack of structured support in both primary and secondary care for practitioners. Study 4.iii indicated that little emphasis is given in the waiting room to the role of lifestyle as a health risk in patients with psoriasis. Information quality was poor as well as being poorly displayed, with no evidence of high-quality psoriasis-specific information that was available for patients.

Study 4.iv indicated that dermatology specialist nurses felt confident about being able to address lifestyle change with patients with psoriasis. However, only 19% reported having knowledge of evidence-based techniques to use in consultations. The respondents' views differed about whether or not health-care professionals had a role to play in addressing lifestyle behaviour change with patients with psoriasis.

Development of interventions to improve outcomes for people with psoriasis (workstream 5)

Methods

The overall aim of workstream 5 was to improve the physical and psychological outcomes of people with psoriasis and associated comorbidities. Based on the findings of workstreams 1–4, two interventions were developed and evaluated in studies 5.i and 5.ii.

Study 5.i aimed to develop evidence- and theory-based, acceptable, feasible and accessible information materials to support people with psoriasis to improve their self-care and coping skills. These were developed iteratively with key stakeholders and theoretically informed to change illness beliefs and recognise the roles of message-framing and health literacy. A mixed-methods, within-group, before-and-after study evaluated feasibility and acceptability. Study 5.i included a scoping study to assess the feasibility and acceptability of an electronic health (or e-health) platform for patients to access and use the new IMPACT materials online.

Study 5.ii aimed to develop and evaluate training for health-care staff to improve services for people with psoriasis. The findings of workstreams 1–4 and the principles of motivational interviewing were used to develop a 1-day training programme. The training was designed to help clinicians use a consultation approach that is consistent with motivational interviewing and to address clinicians' lack of confidence and skills to support lifestyle behaviour change in psoriasis. A pilot before-and-after study was conducted to explore the efficacy of the Psoriasis and Wellbeing (PSO WELL®) small-group motivational interviewing-based training.

Two additional pieces of research supplemented the evaluation of the two PSO WELL interventions. The first was a stated preference survey to provide additional information about preferences for the different components of the PSO WELL intervention. The survey used an online discrete choice experiment and was completed by adults with a diagnosis of psoriasis. The second was an economic model to assess the costs and outcomes of usual care and the PSO WELL interventions. The model incorporated both agent-based and discrete event simulation approaches to explore the probability that the PSO WELL interventions were cost-effective.

Key findings

Study 5.1 found that the PSO WELL information materials were acceptable to patients and feasible to use. In addition, the information materials can improve understanding of psoriasis, increase illness coherence, broaden understanding of psoriasis as a systemic condition and increase participants' sense of control without raising anxiety. People with psoriasis wanted both paper-based materials and access to an interactive e-health platform to learn about self-management and to track their symptoms and flares using data shared with their health-care professionals.

Study 5.ii found that the PSO WELL training increased clinicians' knowledge about the links between psoriasis and lifestyle/mood factors. Clinicians were able to integrate discussion of behaviour change into consultations. The training promoted a more patient-centred consultation style in follow-up evaluation consultations. Patient actors perceived shifts in the consultation style used by clinicians following training that were consistent with core components of motivational interviewing. Participating clinicians felt that the training programme was feasible in existing health-care settings and were satisfied with the content, delivery and assessment methods. However, there were challenges in recruiting participants from primary care (particularly general practitioners) to attend a 1-day training programme.

The stated preference survey found that participants valued improvements in their ability to manage psoriasis and make lifestyle changes and clinic visits that included personalised information plus support for lifestyle changes. The information materials were the least important component of the PSO WELL intervention, although participants valued information materials in printed and online formats. A self-selected sample and limitations in the survey design mean that further work is needed to draw robust and generalisable conclusions.

The exploratory analysis of the economic model indicated that the PSO WELL interventions have the potential to be cost-effective if a typical group of 10 trained clinicians manages around 22 psoriasis patients. Nevertheless, the model analyses are preliminary and rely on uncertain data and a number of assumptions that reduce the robustness of the results.

Conclusions

Consideration and discussion of the IMPACT research programme findings consolidated growing awareness of a need for a paradigm shift from a skin-based approach to one that recognises psoriasis as a complex, long-term condition. This includes the relapsing–remitting nature of psoriasis, management of physical and psychological comorbidities and the role of health behaviours in psoriasis and comorbidity risks. We developed the PSO WELL interventions to help professionals address the needs of people with psoriasis and to empower people with psoriasis by giving them a broader understanding of psoriasis and potential comorbidities and how to minimise them. The interventions were demonstrated to be acceptable, feasible and, in some circumstances, potentially effective and cost-effective; however, the issue of effectiveness and cost-effectiveness will require further examination.

Although the IMPACT programme has identified and addressed a number of key research issues, new questions emerged about the epidemiology of psoriasis and inflammatory arthritis, the identification of people at risk of comorbidities, the benefits of intervening extremely early after diagnosis of psoriasis (e.g. reviewing topical treatments after 4 weeks and, if indicated, stepping up treatments to systemics in accordance with NICE guidance), whether or not the PSO WELL interventions can be implemented and sustained in practice and whether or not they are (cost) effective.

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