Psoriasis: epidemiology, clinical features, and quality of life

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Psoriasis is a common chronic, recurrent, immune mediated disease of the skin and joints. It can have a significant negative impact on the physical, emotional, and, psycho-social well being of affected patients. Psoriasis is found worldwide but the prevalence varies among different ethnic groups. It has a strong genetic component but environmental factors such as infections can play an important role in the presentation of disease. There are several clinical cutaneous manifestations of psoriasis but most commonly the disease presents as chronic, symmetrical, erythematous, scaling and variable papules and plaques. The epidemiology, clinical features, and impact on quality of life of psoriasis are reviewed.

CLINICAL FEATURES

Psoriasis is a papulosquamous disease with variable morphology, distribution, severity, and course. Papulosquamous diseases are characterised by scaling papules (raised lesions <1 cm in diameter) and plaques (raised lesions ≥1 cm in diameter). Other papulosquamous diseases that may be considered in the differential diagnosis include tinea infections, pityriasis rosea, and lichen planus. The lesions of psoriasis are distinct from these other entities and are very well circumscribed, circular, red papules or plaques with a grey or silvery-white, dry scale. In addition, the lesions are typically distributed symmetrically on the scalp, elbows, knees, lumbosacral area, and in the body folds (fig 1). Psoriasis may also develop at the site of trauma or the onset of lesions or determine the onset from the injury, known as Koebner's phenomenon. If psoriasis is progressive or uncontrolled, it can result in a generalised exfoliative erythroderma. Nail involvement may be present, particularly if psoriatic arthritis (PsA) is present.

EPIDEMIOLOGY

Although psoriasis occurs worldwide, its prevalence varies considerably. In the USA, approximately 2% of the population is affected. High rates of psoriasis have been reported in people of the Faroe islands, where one study found 2.8% of the population to be affected.[1] The prevalence of psoriasis is low in certain ethnic groups such as the Japanese, and may be absent in aboriginal Australians[2] and Indians from South America.[3] Psoriasis can present at any age and has been reported at birth and in older people of advanced age. Accurate determination of the age of onset of psoriasis is problematic, as studies which do so typically rely on a patient's recall of the onset of lesions or determine the onset from the initial visit. Data based on patient recall can be inaccurate; determining onset from the time of disease occurrence, as minimal disease may be present, for years before a consultation is sought. A bimodal distribution has been reported on chromosomes 1p (PSORS7), 1q (PSORS4), 3p (PSORS5), 4q (PSORS3), 17q (PSORS2), and 19p (PSORS6).[20] The strength of associations between such genes and susceptibility to psoriasis, apart from PSORS1, is incomplete. The impact on quality of life of psoriasis is reviewed. The difficulty of confirming psoriasis susceptibility loci may relate, in part, to heterogeneity among different populations.

Whereas the existence of a genetic component in psoriasis is certain, the exact locations of the genes involved remain to be definitely determined. This paper reviews the epidemiology and clinical features of psoriasis and its impact of patients' quality of life.

ageofonsethasbeenrecognisedinseverallargestudies The havesharplycircumscribedgyrateredpatcheswithawhite- meanageof onset for the first presentation of psoriasis can yellowborder Thepatchesmayevolveandspread,changingrange from 15 to 20 years of age, with a second peak on a daily basis, can assumedistinct annular patterns and occurringat55–60years 4–7 mayresembleamap,hencethetermgeographictongue Henseler and Christophers examined a series of 2147 Psoriasis can be highly variable in morphology, distribu- patientsandreportedtwoclinicalpresentationsofpsoriasis, tion, and severity Despitethe classic presentation described typeIandII,distinguishedbyabimodalageatonset Type1 beginsonorbeforeage40years;TypeIIbeginsaftertheage above, the morphology can range from small tear shaped of 40 years Type I disease accounts for more than 75%of papules (guttate psoriasis) to pustules (pustular psoriasis) cases 7Patientswithearlyonset,ortypeIpsoriasis,tendedto and generalised erythema and scale (erythrodermic psoria- have more relatives affected and more severe disease than sis) In addition, these different forms of psoriasis may be patientswhohavealateronsetofdiseaseortypeIIpsoriasis localisedorwidespreadanddisabling Further,psoriasismay In addition, strong associations have been reported with have a variable course presenting as chronic, stable plaques humanleucocyte antigen (HLA)-Cw6 in patients with early or may present acutely, with a rapid progression and onset,comparedwithlateronsetofpsoriasis Thecourseand widespreadinvolvement Psoriasismaybesymptomaticwith progress of psoriasis is unpredictable In one study, 39% of patients complaining of intense pruritus or burning The patients reported complete remission of disease for between one and 54 years 8 Higher figures have been reported in Abbreviations: PASI,PsoriasisAreaandSeverityIndex;PsA,psoriatic Japan 9 arthritis;PSI,SalfordPsoriasisIndex;RA,rheumatoidarthritis www.annrheumdis.com Psoriasis:epidemiology,clinicalfeatures,andqualityof life ii19 Figure2 Nummular(coin-sized)lesionsofpsoriasis 2–10mmdiameter lesions of psoriasis These are usually distributed in a centripetal fashion although guttate lesions can also involve the head and limbs Classically, guttate psoriasis occurs shortly after an acute group B haemolytic Figure1 Symmetricaldistributionofpsoriaticlesionsonthebackand streptococcal infection of the pharynx or tonsils and can be elbows the presenting episode of psoriasis in children or, occasion- ally,adults Thenumberoflesionsmayrangefromfiveor10 various types and presentations of psoriasis are outlined to over 100 Guttate psoriasis accounts for 2%of the total below cases of psoriasis In children, an acute episode of guttate psoriasisisusuallyselflimiting;inadults,guttateflaresmay complicatechronicplaquedisease Althoughfewstudieshave CLINICALTYPESOF PSORIASIS assessed the long term prognosis of children with acute Plaque psoriasis guttate psoriasis, one small study revealed that 33%of Thecommonestformofpsoriasisisplaquepsoriasisinwhich patients with acute guttate psoriasis eventually developed patients may have sharply circumscribed, round-oval, or chronicplaquedisease 21 nummular(coin-sized) plaques (fig 2) The lesions may initiallybeginaserythematousmacules(flatand,1cm)or papules,extendperipherally,andcoalescetoformplaquesof Flexural (inverse) psoriasis one to several centimetres in diameter A white blanching Psoriasis affecting the flexures, particularly inframammary, ring,knownasWoronoff'sring,maybeobservedintheskin perineal, and axillary, is distinct morphologically from surrounding a psoriatic plaque With gradual peripheral traditional plaques elsewhere on the trunk and limbs extension, plaques may develop different configurations Flexurallesionsaredevoidofscaleandappearasred,shiny, including: well demarcated plaques occasionally confused with candi- N dal,intertrigo,anddermatophyteinfections psoriasis gyrata—in

which curved linear patterns predomi- nate N Erythroderma annular psoriasis—in which ring-like lesions develop Totalorsubtotalinvolvementoftheskinbyactivepsoriasisis secondarytocentralclearing N known as erythroderma and may take one of two forms psoriasis follicularis—in which minute scaly papules are Firstly, chronic plaque psoriasis may gradually progress as presentattheopeningsofpilosebaceousfollicles plaques becomeconfluent and extensive Secondly, erythro- The terms rupioid and ostraceous relate to distinct morpholo- derma may be a manifestation of unstable psoriasis gicalsubtypesofplaquepsoriasis Rupioidplaquesaresmall precipitated by infection, tar, drugs, or withdrawal of (2–5cm in diameter) and highly hyperkeratotic, resembling corticosteroids Erythrodermamayimpairthethermoregula- limpet shells Ostraceous psoriasis refers to hyperkeratotic torycapacityoftheskin,leadingtohypothermia,highoutput plaques with relatively concave centres, similar in shape to cardiac failure, and metabolic changes including hypoalbu- oystershells minaemia,andanaemiaduetolossofiron,vitaminB 12,and Scale is typically present in psoriasis, is characteristically folate silvery white, and can vary in thickness Removalof scale may reveal tiny bleeding points (Auspitz sign) The amount Generalised pustular psoriasis ofscalingvariesamongpatientsandevenatdifferentsiteson Generalised pustular psoriasis (von Zumbusch)is rare and a given patient In acute inflammatory or exanthematic represents active, unstable disease Precipitants include psoriasis, scaling can be minimal and erythema may be the withdrawal of systemic or potent topical corticosteroids and predominantclinicalsign infections Thepatientispyrexial,withred,painful,inflamed skinstuddedwithmonomorphic,sterilepustules,whichmay Guttate psoriasis coalesce to form sheets Patients with generalised pustular Guttate psoriasis, from the Greek word gutta meaning a psoriasis frequently need to be admitted to the hospital for droplet, describes the acute onset of a myriad of small, managementwww.annrheumdis.com ii20 Langley,Krueger, Griffiths Figure3 Palmoplantarpustulosis Palmoplantar pustulosis Palmoplantar pustulosis presents as sterile, yellow pustules onabackgroundoferythemaandscalingaffectingthepalms Figure4 Nailchangesinpsoriasis Reproducedwithpermission and/or soles (fig 3) The pustules are tender and fade to form dark brown coloration with adherent scale/crust Palmoplantar pustulosis is frequently associated with psor- iatic nail involvement Approximately 25%of cases are associated with classic psoriasis vulgaris, but it is now believed that palmoplantar pustulosis may not be a form of psoriasis 22 This conclusion is derived from genetic studies showing no association with HLA-Cw6or other markers on chromosome6p—whicharelinked to chronic plaque and guttate psoriasis The demographics of palmoplantar pustu- losis are markedly different from those of chronic plaque psoriasis in that it more commonlyaffects women (9:1), presents most commonlybetween the ages of 40 and 60 years, and has a very striking association with smoking, eithercurrentorpast,inupto95%ofsubjects 23 Psoriatic nail disease Fingernails are more commonlyaffected than toenails The commonestfinding is small pits in the nail plate, resulting fromdefectivenailformationintheproximalportionofthe nailmatrix(fig4) Thenailmayalsodetachfromthebedat Figure5 Nailplatesinapatientwithpsoriasis Theyarethickened, its distal or lateral attachments, known as onycholysis (see dystrophic,andshoworange-yellowareas(oilspots) fig4) Orange-yellowareasmaybepresentbeneaththenail plate and are termed ‘‘oil spots’’ In addition, the nail plate may become, thickened, dystrophic, and discolored (fig 5) everyday disability leading to depression and suicidal idea- Yellow, keratinousmaterial may collect under the nailplate tioninmorethan5%ofpatients 28 andisknownassubungualhyperkeratosis Recent work has identified that pathological worry and anxietyoccurinatleastathirdofpatientswithpsoriasisand QUALITYOF LIFE AND PSYCHOLOGICAL

ASPECTS OF PSORIASIS

that psychological interpersonal difficulties impinge on all aspects of the patient's daily life 29 31 The two main contributors to stress in patients with psoriasis are engaging in avoidance behaviour and the belief that they are being evaluated on the basis of their skin disease This constraining, Despite this, most clinical trials of new treatments for avoidance behaviour may lead to low grade persistent stress psoriasis focus on "objective" physical measures for the Intriguingly, there is no significant relation between either primary endpoint of efficacy This is incongruous as it is the the physical severity or anatomic location of psoriasis and improvement in quality of life that patients and physicians psychological disability 32 33 This observation implies that rely upon when selecting treatment Impairment of quality of "severity" of psoriasis is a composite of physical and life has been highlighted particularly by the work of psychological factors, a disparity further highlighted by the Finlay 25 26 Patients with psoriasis have a reduction in their Psoriasis Disability Index 34 Stress in the form of pathological quality of life similar to or worse than patients with other worry has a deleterious effect on response to therapy For chronic diseases, such as ischaemic heart disease and instance, in patients undergoing PUVA therapy, those who diabetes 25 That patients with psoriasis feel stigmatised by are delineated as being high or pathological worriers clear the condition is well established 30 This of itself contributes to significantly more slowly, if at all, as compared with their

counterparts who are low worriers 35 Psychological interven-
S—Signs: a 0–10 measure of physical severity derived from tion may play a role in the management of psoriasis, the PASI N particularly in the form of cognitive behavioural stress P—Psychosocial disability: measured as 0–10 on a visual management 36 This form of intervention, when used as an analogue scale N adjunct to regular pharmacological therapy, produces a I—Interventions: a cumulative historical record of sys- significant additional benefit identified as improvement in temic therapies, episodes of erythroderma, etc clinical severity of disease How psychological distress exacerbates or triggers psoriasis is poorly understood Up to The SPI is represented as three figures such as 9,7,6 and is a 60% of patients describes stress as being a key "exacerbator" guide to the difficulty of treating anyone patient at a certain or trigger of their disease 37 38 It is known that psychological time stress has the potential to regulate the immune response, and Physicians evaluating chronic disease states, such as RA there is emerging evidence that abnormal neuroendocrine and inflammatory bowel disease (IBD), have used quality of responses to stress may contribute to the pathogenesis of life data to assess treatment efficacy The Inflammatory chronic autoimmune diseases, as has been described for Bowel Disease Questionnaire, a commonly used quality of life rheumatoid arthritis (RA) 39 It is likely that, in some patients measure for IBD, has been validated in Crohn's disease 48 and with psoriasis, there is an abnormal hypothalamical–adrenal has been shown to correlate highly with the commonly used axis response to acute stress, undoubtedly an area deserving objective measure, the Crohn's Disease Activity Index of further investigation (CDAI) 49 The CDAI also incorporates a quality of life Many instruments have been generated to measure aspects assessment, "the patient's sense of wellbeing", as one of of disease on quality of life Some reflect general health the eight measurable items 50 In the American College of status, some reflect on skin disease in general, and yet others Rheumatology (ACR) improvement criteria for RA, a quality

assesstheimpactofpsoriasisandPsA(table1) Thecurrent of life measure is often employed as the measure of metricsforqualityoflifein psoriasisgenerally measureonedisability 51 Moreover, ACRresponse rates have been found ortwocategories,thephysicalaspectsofdisease(pain,itch, tobehigherwhenqualityoflifecriteriaareused insteadof etc) or the mental aspects of disease (self perception, objective measures, such as grip strength, to assess physical interaction with others, etc) To have a maximal quality of function/disability 52 life,one needs tobe able toparticipate in all aspects oflife, For psoriasis, many quality of life instruments have been including effective interaction with others and carrying out developed and tested in clinical trials to assess treatment physical responsibilities, both at work and at homePatient response where the primary endpoint is the number of orientedqualityoflifemeasuresareparticularlybeneficialin patients gaining a 75%reduction in the Psoriasis Area and chronic diseases as they assess how the disease affects a Severity Index (PASI) relative toplacebo Table 1 lists these personsocially,psychologically,andphysically 47 andafewelementsofeach Inareviewoftrialswhereboth Furthermore,qualityoflifemeasurestakeintoaccountthe physical measures and quality of life were collected, two effect of the treatment on the patient Quality of life data things stood out First, the correlation with the physical fulfils the role of measuring the intangible changes in a measure, such as the PASI, and quality of life is generally patient's life that determine ''treatment success'' For a very poor, the correlation coefficient being less than 0 2 clinicallymeaningful changeto existfor psoriasisand other Second,theimprovementinqualityoflifeovertimegenerally chronic, non-life threatening diseases, a treatment must parallelsthephysicalmeasure 53Thissupportsthenotionthat provideanimprovementinthepatient'squalityoflife Inan qualityoflifeandthePASImeasuretwodifferentaspectsof attempt to provide an holistic assessment of overall disease disease Given that it is the promise of change in quality of severity, a specific tool has been developed—theSalford lifebyagiventreatmentthatpatientsandphysicianrelyon PsoriasisIndex(SPI)32: in choosing treatment, it is not surprising that considerable Table1 Instrumentsusedinassessingqualityoflifeinpsoriasisandpsoriaticarthritis Name Abbreviation Features MedicalOutcomesStudy36ItemShortForm36SF-36 36items;eightscalesforphysicalandmentalhealth;usedtocomparequalityoflifeof skindiseasewithotherdisease NottinghamHealthProfile40 NHP 38items;sixscalesrangingfromphysicalmobilitytosocialisation SicknessImpactProfile41 SIP 136items;12scalesforphysicalandmentalhealth,aswellassleep,eating,work, recreation,etc 12ItemGeneralHealthQuestionnaire42 GHQ 12itemquestionnairewithhighercorrelationtoPASIthanothers DermatologyLifeQualityIndex43 DLQI Widelyused;12reports, 2500patients,ofuseinpsoriasis;isinternallyconsistent, correlateswithotherqualityoflifetools—forexamplePSORIQoL,PQoLI,PDI,etc PsoriasisDisabilityIndex44 PDI 15questionsforfunctionaldisabilityinpsoriasis Skindex-2942 Skindex-29 29itemsandscalesderivedfromSkindex-61 ImpactofPsoriasisQuestionnaire42 IPSQ Assessespsychosocialimpactofpsoriasis PsoriasisLifeStressInventory42 PLSI Stressinventorythatcorrelateswith DLQIandIPSQ DermatologySpecificQualityofLifeInstrument40 DSQLI 52items,eightglobalitems(physicalsymptomstoappearanceandseverity);seven scales DermatologyQualityofLifeScales40 DQLS41itemswiththreescales PsoriaticArthritisSpecificMeasure PsAQoL Seriesofquestionsgeneratedfrominterviewswithsubjectswithpsoriaticarthritis, ofQualityofLife45 narrowedfrom51to20withRaschAnalysis;validatedandreliable PsoriasisSpecificMeasureofQualityofLife46 PSORIQoL Seriesofquestionsgeneratedfrominterviewswithpsoriaticsubjects,narrowedfrom

61to25usingRaschAnalysisofeachroundofquestioning PsoriasisQualityofLifeQuestionnaire46
PQoLFashionedafterDQLIwithspecificityforpsoriasis DermatologyUtilities47 DU
Qualityoflifeinstrumentsassesshealthstatus,DUarederivedfromdecisiontheory
andcanbeinterpretedacrossdiseasesandpopulations www.annrheumdis.com ii22
Langley,Krueger, Griffiths thought and energy have gone into generating instruments 6
FerrandizC,PujolRM,Garcia-PatosV,BordasX,SmandiaJA Psoriasisof
thateasilyandreproduciblymeasurequalityoflife
earlyandlateonset:aclinicalandepidemiologicstudyfromSpain JAmAcadDermatol2002;46:867–73
Anumberofinstruments have beendesigned togenerate 7 HenselerT,ChristophersE
Psoriasisofearlyandlateonset:characterization disease specific quality of life
assessments, of which several oftwotypesofpsoriasisvulgaris JAmAcadDermatol1985;13:450–6
arerepresentedintable1 Theseofferadvantagesinthatthey 8 FarberEM,NallLM
Thenaturalhistoryofpsoriasisin5600patients Dermatologica1974;148:1–18
housequalityoflifeissuesuniquetothatdiseaseandhence 9 YashudaT,IshikawaE,MoriS
PsoriasisintheJapanese In:FarbertEM,
wouldbemorerobustinfollowingdiseasespecificqualityof CoxAJ,eds Psoriasis
Proceedingsofthe1stInternationalSymposium life issues Recently, McKennaand colleagues
focused on Stanford,CA:StanfordUniversityPress,1971:25–34 generating a disease specific
quality of life instrument by 10
TrembathRC,CloughRL,RosbothamJL,JonesAB,CampRD,FrodshamAJ,et
Identificationofamajorsusceptibilitylocusonchromosome6pand developing questions after an
extensive interview process
evidenceforfurtherdiseaselocirevealedbyatwostagegenome-widesearch
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HumMolGenet1997;6:813–20that fit with quality of life issues for the test on
test–retest 11 NairRP,HenselerT,JenischS,StuartP,BichakjianCK,LenkW,etal
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Evidencefortwopsoriasissusceptibilityloci(HLAand17q)andtwonovel
candidateregions(16qand20p)bygenome-widescan HumMolGenetto be specific to quality of
life issues for patients with 1997;6:1349–56 psoriatic arthritis45 and psoriasis,46
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these instruments will be more robust for quality of life in
betweenpsoriasis-susceptibilitylocionchromosomes6p21and1q21 AmJHumGenet1999;65:1798–800
patientswithpsoriasisthanthosedesignedforgeneralhealth 13
EnlundF,SamuelssonL,EnerbackC,InerotA,WahlstromJ,YhrM,etal or specific for skin disease
or psoriasis remains to be
AnalysisofthreesuggestedpsoriasissusceptibilitylociinalargeSwedishset determined
offamilies:confirmationoflinkagetochromosome6p(HLAregion),andto
Whereasthegeneralhealthinstruments,suchastheSF-36 17q,butnotto4q HumHered1999;49:2–8.14
VealCD,CloughRL,BarberRC,MasonS,TillmanD,FerryB,etal
(seetable1),canbeusedtocomparetheburdenofdiseaseof
Identificationofanovelpsoriasissusceptibilitylocusat1pandevidenceof different diseases
such as diabetes and psoriasis, these epistasisbetweenPSORS1andcandidateloci
JMedGenet2001;38:7–13.instruments are not good at incorporating outcomes into 15
NairRP,StuartP,HenselerT,JenischS,ChiaNV,WestphalE,etal
Localizationofpsoriasis-susceptibilitylocusPSORS1toa60-kbinterval cost effectiveness
analysis An instrument called ‘‘utilities’’ telomerictoHLA-C AmJHumGenet
2000;66:1833–44,Erratumin:AmJ hasbeenunderdevelopmentforthis,andrecentlyithasbeen
HumGenet2002;70:1074 applied to skin diseases Utilities are measuredin a manner 16
CaponF,NovelliG,SempriniS,ClementiM,NudoM,VultaggioP,etal that permits interpretation
across

diseases and populations Searchingforpsoriasissusceptibilitygenesin Italy:genomescanand evidenceforanewlocusonchromosome1 JInvestDermatol This is accomplished by asking patients to indicate their 1999;112:32–5 willingness to trade disease free status for the remainder of 17 EnlundF,SamuelssonL,EnerbackC,InerotA,WahlstromJ,YhrM,etal theirlivesinexchangeforareductionintheirlifespanandto Psoriasissusceptibilitylocusinchromosomeregion3q21identifiedinpatients fromsouthwestSweden EurJHumGenet1999;7:783–90 indicate the amount of reduction they would be willing to 18 MatthewsD,FryL,PowlesA,WeberJ,McCarthyM,FisherE,etal Evidence accept As an example, patients in follow up for psoriasis thatalocusforfamilialpsoriasismapstochromosome4q NatGenet indicated a willingness to trade 2 8years oftheir remaining 1996;14:231–3 35yearsofexpectedlifespanfornodisease Byextrapolation, 19 TomfohrdeJ,SilvermanA,BarnesR,Fernandez-VinaMA,YoungM,LoryD,etal patients with severe Geneforfamilialpsoriasissusceptibilitymappedtothedistalendof psoriasis would appear to be willing to humanchromosome17q Science1994;264:1141–5 trade4 2yearsfornodisease,equivalenttothatofapatient 20 LeeYA,RuschendorfF,WindemuthC,Schmitt-EgenolfM,StadelmannA, withmetastaticcanceroftheprostate 47 NurnbergG,etal Genomewidescaningermanfamiliesrevealsevidencefor anovelpsoriasis-susceptibilitylocusonchromosome19p13 AmJHumGenet2000;67:1020–4

CONCLUSION 21 MartinBA,ChalmersRJ,TelferNR Howgreatistheriskoffurtherpsoriasis Atthistime,therearemanyinstrumentstomeasurequality followingasingleepisodeofacuteguttatepsoriasis?ArchDermatol 1996;132:717–18 oflifeforpsoriasisandPsA Itdoesnotappearthatonewill 22 AsumalahtiK,AmeenM,SuomelaS,HagforsenE,MichaelssonG,EvansJ,et cover all the issues that quality of life encompasses al GeneticanalysisofPSORS1distinguishesguttatepsoriasisand Additionaltestingisneededtobetterdefinewhichelements palmoplantarpustulosis JInvestDermatol2003;120:627–32 of quality of life are sensitive and predictive of clinically 23 O'DohertyCJ,MacIntyreC Palmoplantarpustulosisandsmoking BMJ(Clin ResEd)1985;28:861–4meaningfulchanges 24 KruegerGG,FeldmanSR,CamisaC,DuvicM,ElderJT,GottliebAB,etal Twoconsiderationsforpatientswithpsoriasisandtheirclinicians:what definesmild,moderate,andseverepsoriasis?Whatconstitutesaclinically Authors'affiliations significantimprovementwhentreatingpsoriasis?JAmAcadDermatol RGBLangley,DivisionofDermatology,DepartmentofMedicine, 2000;43:281–5 25 FinlayAY,KellySE Psoriasis—anindexofdisability ClinExpDermatol DalhousieUniversity,Halifax,NovaScotia,Canada 1987;12:8–11 GGKrueger,DepartmentofDermatology,UniversityofUtah,SaltLake 26 FinlayAY,ColesEC City,Utah,USA patients Theeffectofseverepsoriasisonthequalityoflifeof369 BrJDermatol1995;132:236–44 CEMGriffiths,DermatologyCentre,UniversityofManchester,Hope 27 GinsburgIH,LinkBG Feelingofstigmatizationinpatientswithpsoriasis JAm Hospital,Manchester,UK AcadDermatol1989;20:53–6328 GuptaMA,SchorkNJ,GuptaAK Suicidalideationinpsoriasis IntJDermatol Correspondenceto: 1993;32:188–90 DrRGBLangley,DivisionofDermatology, DepartmentofMedicine,DalhousieUniversity,4195DicksonBuilding, 29 SavinJA Patients'beliefsaboutpsoriasis TransStJohnsHospDermatolSoc1970;56:139–42 5820UniversityAvenue,Halifax,NovaScotia,CanadaB3H1V6; 30 RichardsHL,FortuneDG,GriffithsCE,MaineCJ Thecontributionof rgblangl@dal ca perceptionsofstigmatisationtodisabilityinpatientswithpsoriasis JPsychosomRes2001;50:11–15 31 FortuneDG,MainCJ,O'SullivanTM,GriffithsCE Assessingillnessrelated REFERENCES stressinpsoriasis:thepsychometricpropertiesofthePsoriasisLifeStress

1 LomholtG Prevalenceofskindiseaseinapopulation:Acensusstudyfromthe Inventory
JPsychosomRes1997;42:467–75 Faroeislands DanMedBull1964;11:1–732
KirbyB,FortuneDG,BhushanM,ChalmersRJ,GriffithsCE TheSalford 2 GreenAC
AustralianAboriginesandpsoriasis AustralasJDermatol
PsoriasisIndex:anholisticmeasureofpsoriasisseverity BrJDermatol 1984;25:18–24
2000;142:728–32 3 ConvitJ Investigationoftheincidenceofpsoriasisamongst Latin-American 33
KirbyB,RichardsHL,WooP,HindleE,MainCJ,GriffithsCE Physicaland Indians
In:Proceedingsof13thCongressonDermatology Amsterdam:
psychologicmeasuresarenecessarytoassessoverallpsoriasisseverity JAm
ExcerptaMedica,1962:196 AcadDermatol2001;45:72–64 BurchPR,RowellNR
Modeofinheritanceinpsoriasis ArchDermatol 34 FinlayAY,KellySE
Psoriasis—indexofdisability ClinExpDermatol 1981;117:251–2 1987;12:8–11 5
SmithAE,KassabJY,RowlandPayneCM,Beer BWE odalityinageof 35
FortuneDG,RichardsHL,KirbyB,McElhoneK,MarkhamT,RogersS,etal
onsetofpsoriasis,inbothpatientsandtheirrelatives Dermatology
Psychologicaldistressimpairsclearanceofpsoriasisinpatientstreatedwith 1993;186:181–6
photochemotherapy ArchDermatol2003;139:752–6 www.annrheumdis.com
Psoriasis:epidemiology,clinicalfeatures,andqualityof life ii23 36
FortuneDG,RichardsHL,KirbyB,BowcockS,MainCJ,GriffithsCE A
lifedesignedforuseinclinicalpracticeandtrials BritJDermatol
cognitive-behaviouralsymptommanagementprogrammeasanadjunctin2003;149:323
psoriasistherapy BrJDermatol 2002:146,458–65 47
ChenSC,BayoumiAM,SoonSL,AftergutK,CruzP,SextonSA,etal A 37 SevilleRH Psoriasisandstress
BrJDermatol1977;97:297–302
catalogofdermatologyultilities:ameasureoftheburdenofskindiseases 38
FortuneDG,RichardsHL,MainCJ,GriffithsCE Whatpatientswithpsoriasis
JInvestigDermatolSympProc2004;9:160–8 believeabouttheircondition
JAmAcadDermatol1998;39:196–208
TouwCR,Hakkaart-VanRoijenL,VerboomP,PaulC,RuttenFF,FinlayAY 39
JorgensenC,BressotN,BolognaC,SanyJDysregulationofthe
Qualityoflifeandclinicaloutcomeinpsoriasispatientsusingintermittent
hypothalamo-pituitaryaxisinrheumatoidarthritis JRheumatol cyclosporin
BrJDermatol2001;144:967–72 1995;22:1829–33 49 PallisAG,MouzasIA,VlachonikolisIG
Theinflammatoryboweldisease 40 deKorteJ,MombersFM,SprangersMA,BosJD
Thesuitabilityofquality-of- questionnaire:areviewofitsnationalvalidationstudies
InflammBowelDis lifequestionnairesforpsoriasisresearch:asystematicliteraturereview Arch
2004;10:261–9 Dermatol2002;139:1221–7 50
IrvineEJ,FeaganB,RochonJ,ArchambaultA,FedorakRN,GrollA, 41
deKorteJ,SprangersMA,MombersFM,BosJD Qualityoflifeinpatients etal
Qualityoflife:avalidandreliablemeasureoftherapeutic
withpsoriasis:asystematicliteraturereview JInvestigDermatolSympProc
efficacyinthetreatmentofinflammatoryboweldisease Canadian 2004;9:140–7
Crohn’sRelapsePreventionTrialStudyGroup Gastroenterology 42 SampognaF,SeraF,AbeniD
Measuresofclinicalseverity,qualityoflife, 1994;106:287–96
andpsychologicaldistressinpatientswithpsoriasis:aclusteranalysis JInvest 51
BestWR,BecktelJM,SingletonJW Rederivedvaluesoftheeightcoefficients
Dermatol2004;122:602–7 oftheCrohn’sDiseaseActivityIndex(CDAI) Gastroenterology 43
LewisV,FinlayAY 10yearsexperienceoftheDermatologyLifeQualityIndex 1979;77:843–6 (DLQI)
JInvestigDermatolSympProc2004;9:169–80 52
FelsonDT,AndersonJJ,BoersM,BombardierC,FurstD,GoldsmithC,etal 44 FinlayAY,ColesEC
Theeffectofseverepsoriasisonthequalityoflifeof369

American College of Rheumatology Preliminary definition of improvement in patients
Br J Dermatol 1995;132:236–44 rheumatoid arthritis Arthritis Rheum 1995;38:727–35 45
McKenna SP, Doward LC, Whalley D, Tennant A, Emery P, Veale DJ 53
Paulus HE, Bulpitt KJ, Ramos B, Park G, Wong WK; Western Consortium of
Development of the PsAQoL: a quality of life instrument specific to psoriatic
Practicing Rheumatologists Relative contributions of the components of the arthritis
Ann Rheum Dis 2004;63:162–9 American College of Rheumatology 20% criteria for improvement to 46
McKenna SP, Cook SA, Whalley D, Doward LC, Richards HL, Griffiths CE,
responder status in patients with early seropositive rheumatoid arthritis et al
Devlopment of the PSORIQoL, a psoriasis-specific measure of quality of
Arthritis Rheum 2000;43:2743–50 www.annrheumdis.com