DATA SUPPLEMENT 1

Table DS1 Treatment of delusional parasitosis with typical antipsychotics (selected open studies or retrospective studies with samples > 30)[1]

Study	*n*	No. with primary delusional parasitosis	Study design	Treatment	Main findings	Comment
Frithz (1979)	15 (14 F)	15	Open	Fluphenazine decanoate (*n*=10): 7.5–25 mg i.m. all 3 weeks; flupenthixol decanoate (*n*=5): 6–20 mg i.m. all 3 weeks; duration: 3–12 months	Full remission, *n*=11 (73%); Partial remission, *n*=3 (20%); No effect, *n*=1 (7%); relapse within 3 months after treatment end: *n*=6; symptom-free after treatment end, *n*=2	Open study with very good outcome with depot antipsychotics in severe primary delusional parasitosis mostly refractory to oral antipsychotics
Hamann & Avnstorp (1982)	11 (10 F)	5	Double-blind crossover (with 4 weeks' wash-out)	Pimozide initially 2 mg/day, then 1–5 mg/day, 6 weeks	Partial remission: pimozide, *n*=10 (91%), placebo, *n*=1 (*n*=2 drop-out); No effect: pimozide phase, *n*= 1; placebo phase, *n*=8/9; pimozide significantly better than placebo (itching, delusion) and trend to effect on 'presence of vermin' and excoriations; 6 weeks needed for effect on delusions; side-effects under pimozide, *n*=8/11 (73%), e.g. drowsiness, extrapyramidal symptoms, depression; open study phase after end of cross-over trial (*n*=7): *n*=4 stopped treatment (no follow-up), *n*=2 stopped treatment without relapse (5 months), *n*=1 lost to follow-up	Study on delusional parasitosis treatment with the best design; very good response to pimozide in primary and other forms of delusional parasitosis, superiority of pimozide over placebo; many side-effects under pimozide; small sample; only 50% primary delusional parasitosis; no randomised allocation to treatment groups
Munro (1982)	25	9	Open	Pimozide (*n*=9 patients with primary delusional parasitosis), 0–10 mg/day	In patients with primary delusional parasitosis full remission, *n*=3; partial remission, *n*=5; no effect, *n*=1 (only 11%)	Good effect of pimozide in primary delusional parasitosis shown in open study; a direct comparison of pimozide and another antipsychotic was impossible because of patient non-adherence to study conditions
Lyell (1983)	282	?/282	Questionnaire; *n*=216/374 UK dermatologists reported patients	Pimozide (*n*=66), 2–12 mg/day	Partial remission, *n*=44/66 (67%); No effect, *n*=16/66; Effect unknown, *n*=6/66 lost to follow-up; only 5 patients regularly attended a psychiatrist	Good outcome for delusional parasitosis treated with pimozide by UK dermatologists in the largest sample available today (*n*=66)
Ungvari (1983, 1984)	26	19	Open study with follow-up 6 months to 5 years (mean 16 months)	Pimozide (*n*=18 primary delusional parasitosis), initially 1 mg/day, acute treatment 2–5 mg/day, maintenance 1–2 mg/day; (an additional patient with primary delusional parasitosis was given haloperidol)	Primary delusional parasitosis: remission (no full insight): pimozide: *n*=12/18 (67%), partial remission: *n*=7/19 (37%) with pimozide (*n*=6) or haloperidol (*n*=1); no response, *n*=0; Other forms of delusional parasitosis: partial or full remission, *n*=7/7 (100%) with pimozide, haloperidol or fluspirilene; discontinuation of antipsychotics was followed by relapses soon; side-effects of pimozide: *n*=10/26, e.g. extrapyramidal symptoms (*n*=7), sedation (*n*=5)	Good response to pimozide (and other typical antipsychotics) in primary and other forms of delusional parasitosis moderate rate of side-effects under low doses of pimozide on maintenance treatment (1–2 mg/day)

Table DSI (*continued*)

Study	*n*	No. with primary delusional parasitosis	Study design	Treatment	Main findings	Comment
Lindskov & Baadsgaard (1985)	14	?/14	Follow-up study after discontinuation of pimozide (19–48 months)	After successful acute treatment pimozide was discontinued and re-introduced if needed	Continued remission: *n*=7/14 (50%), relapse: *n*=3/14, again symptom-free under intermittent pimozide; poor response: *n*=4/14 remained symptomatic	After successful acute treatment with pimozide 50% of delusional parasitosis patients remain in remission after discontinuation (in contrast to other studies); small sample size
Reilly & Batchelor (1986)	53	32(?)/53	Questionnaire; *n*=386 British dermatologists	Different strategies used: psychopharmacological treatment in general (*n*=23/53); dermatological treatment (topical, systemic) (*n*=9/53); combined (dermatogical plus psychopharmacological treatment) (*n*=10/53); no active treatment (*n*=10/53); psychotherapy plus antidepressant (*n*=1/53)	Partial remission, dermatological treatment alone: *n*=1/9 (11%), psychopharmacological treatment: *n*=13/23 (56%), combined treatment: *n*=6/10 (60%); *n*=17/20 (85%) of patients who responded to psychotropic treatment were treated with pimozide (*n*=13 monotherapy, *n*=2 plus lorazepam, *n*=2 plus clomipramine); No effect: *n*=14 did not improve on psychotropic medication (*n*=4 pimozide, *n*=3 chlorpromazine, *n*=2 thioridazine, *n*=2 haloperidol, etc.)	Interview of British dermatologists showing inferiority of mere dermatological treatment compared with psychotropic or combined treatment; good response to pimozide, but not effective in all cases; no direct comparison, no prospective trial, form of delusional parasitosis unclear (primary?)
Ungvari & Vladar (1984, 1986)	10 (7 F)	10	Double-blind, placebo-controlled, on-off-on design (no crossover), no randomisation; masked rating	Phase 1: pimozide initially 1 mg/day, then individually 2–8 mg/day, 3 weeks; phase 2: placebo 3 weeks; phase 3: again pimozide, 2 weeks	Full remission: *n*=0; partial remission, *n*=10/10 (100%) responded in both pimozide phases, whereas under placebo in 9/10 there was symptom increase, *n*=1/10 remained unchanged	Good response to pimozide in primary delusional parasitosis (however no full remission); authors deliberately chose not to use a crossover design because they expected to lose patients in the 'placebo first' group; order effects and insecure masking (always pimozide first); small sample size
Bourgeois (1986)	150 (126 F)	??/150	Questionnaire; *n*=134/2160 French dermatologists reported patients	Different strategies used: typical antipsychotics (haloperidol, sulpiride or pimozide) (*n*=47/145); no psychotropic treatment (*n*=37/145); benzodiazepines (*n*=41/145); antidepressants (*n*=11/145); oral antihistamines (*n*=36/141); local antiseptics or steroids (*n*=94/116)	No outcome reported	Interviews with French dermatologists showing rare use of antipsychotics for management of delusional parasitosis (less than one-third of all patients)
Musalek *et al* (1989)	34 (29 F)	?/34	Open study, specialised out-patient clinic in dermatology with liaison psychiatrist (1986–7)	Treatment according to pathogenesis of delusional parasitosis: delusional parasitosis with depression (*n*=12): amitriptyline, doxepine, maprotiline; delusional parasitosis with schizophrenia (*n*=1): antipsychotic not further specified; delusional parasitosis with organic psychosis/dementia (*n*=13): nootropics (plus antipsychotics) some patients did not receive medication	Overall: full remission, *n*=17/34 (50%); partial remission, *n*=5/34 (15%); no effect, *n*=12/34 (35%) Delusional parasitosis in depression: full remission, *n*=9/12 (75%); partial remission, *n*=3/12 (25%), no effect, *n*=0/12 (0%) Delusional parasitosis in organic psychosis: full remission: *n*=3/13 (23%); partial remission, *n*=1/13 (8%), no effect, *n*=9/13 (69%)	Open study in a specialised out-patient clinic showing different outcome depending on pathogenesis of delusional parasitosis (100% response or remission in delusional parasitosis based on affective disorder, but only 31% in delusional parasitosis based on organic brain disease)

Table DSI (*continued*)

Study	*n*	No. with primary delusional parasitosis	Study design	Treatment	Main findings	Comment
Paholpak (1990)	10 (5 F)	9	Open study (1981–8)	Haloperidol (*n*=10). 1–5 mg/day	Partial remission: *n*=10/10 (100%), even after 2 months and at later follow-up (letter) no full insight into the nature of the illness (no full remission)	Good effects of oral haloperidol treatment in primary delusional parasitosis (Thailand) shown in open study
Trabert (1993)	35 (27 F)	17	Open study (1989–91) specialised out-patient clinic located in dermatology	Pimozide (*n*=15, primary?): dose and duration? several butyrophenones (*n*=15): details? fluspirilene (*n*=2): i.m., dose and duration? antipsychotics plus antidepressant (*n*=7): dose and duration?	Full remission (with full insight): *n*=9/33 (27%), Partial remission (marked and moderate response: *n*=18/33 (55%), No or little effect: *n*=6/33 (18%); Non-significant trend for best outcome for delusional parasitosis in depression and worst in schizophrenia; longer duration of treatment was associated with better outcome; *n*=7/35 (20%) attended the out-patient clinic only once, *n*=20/35 (57%) were seen less than 3 months	Open study showing rather good outcome in delusional parasitosis in general; difficulty to keep in touch with patients even in a specialised clinic located in dermatology; classic work on psychopathology and epidemiology of delusional parasitosis; no controlled design, only 50% primary delusional parasitosis
Srinivasan *et al* (1994)	19 (12 F)	19	Open study (1987–91); random treatment; masked rating	Trifluoperazine (*n*=6): 10–15 mg/day, 4–8 weeks; chlorpromazine (*n*=3): 150–300 mg/day, 4 weeks; haloperidol (*n*=2): 10 mg/day, 4 weeks; bilateral sinusoidal electroconvulsive therapy (*n*=8): 2–6 sessions; *n*=4 continued on antipsychotics for 3–12 months	Full remission: *n*=11/19 (58%), among these 6/11 after electroconvulsive therapy; follow-up: *n*=7/19 for >6 months, *n*=5/19 for >3 years, symptom relapses on non-adherence; Partial response: *n*=6/19, only *n*=1 after electroconvulsive therapy; No effect: *n*=2/19 (*n*=1 after chlorpromazine, *n*=1 after electroconvulsive therapy)	Well-designed open study in primary delusional parasitosis showing good outcome after electroconvulsive therapy and typical antipsychotics other than pimozide (questioning superiority of pimozide)
Trabert (1995)	1223	?/1223	Meta-analysis based on 193 articles	Treatment pre-/post-antipsychotic era (before and after 1960; *n*=262)	Full remission: ~50% of patients (*n*=301); in psychopharmacological era: 51.9%, pre-pharmacological era: only 33.9% (significantly less); better outcome in cases with shorter untreated illness; improvement starts after 3–4 weeks	Most comprehensive work on delusional parasitosis so far showing a better outcome in delusional parasitosis after introduction of antipsychotics; publication bias likely (over-reporting of successful treatment)
Zomer *et al* (1998)	33 (20 F)	?/33	Retrospective, case series (1982–1996) with follow-up after discontinuation; dermatology	Pimozide (*n*=24): 1–5 mg/day; medication ? in *n*=9 patients; pimozide was tapered 6 weeks after clinical improvement	Initial treatment: only *n*=18/24 (75%) took pimozide; Full remission: pimozide: *n*=6/18 (33%), without pimozide (refused or not prescribed) *n*=1/15 (7%), Partial remission: pimozide: *n*=5/18 (28%), without pimozide *n*=2/15 (13%), No effect: pimozide: *n*=7/18 (39%), without pimozide, *n*=12/15 (80%) Follow-up after pimozide discontinuation (*n*=15 lost): Full remission *n*=5/18, mean follow-up 5.1 years, all 5 patients were without pimozide maintenance, Partial remission: *n*=4/18, No effect: *n*=5/18	Case series showing superiority of treatment with pimozide compared with without pimozide in acute delusional parasitosis (response in 61% *v.* 20% of patients), but questioning necessity of maintenance after remission; little adherence for pimozide in patients with delusional parasitosis; type of delusional parasitosis unclear (primary?)

Table DSI (*continued*)

Study	*n*	No. with primary delusional parasitosis	Study design	Treatment	Main findings	Comment
Bhatia *et al* (2000)	52 (33 F)	32/52	Open study (1991–7) psychiatric out-patient clinic	Treatment depending on form of delusional parasitosis; pimozide (*n*=32 primary delusional parasitosis, *n*=14 other): 4–8 mg/day; amitriptyline (*n*=3 delusional parasitosis in depression): 75–150 mg/day; fluoxetine (*n*=3 delusional parasitosis in trichotillomania): 20 mg/day	Pimozide (primary and other forms of delusional parasitosis): full remission: *n*=24/46 (52 %) partial remission: *n*=16/46 (35%) no effect: *n*=6/46 (13%) amitriptyline (delusional parasitosis in depression) full remission: *n*=3/3 (100%) fluoxetine (delusional parasitosis in trichotillomania): full remission: *n*=3/3 (100%)	Open study with good results for pimozide in a rather large sample of patients with primary and other forms of delusional parasitosis; better outcome for delusional parasitosis in depression or trichotillomania under specific treatment (*n*=3 only)

1. We tried to establish whether the paper dealt with primary or other forms of delusional parasitosis. The outcome was re-assessed and assigned to the following categories (if possible): no effect, partial remission (response) and full remission.