

Clinical characteristics of new patients attending neurology outpatient clinics. Values are numbers (percentages) unless indicated otherwise

	Patients with suicidal ideation* (n=26)	Patients without suicidal ideation (n=274)	Relative risk (95% CI)
Men	12 (46)	114 (42)	1.11 (0.71 to 1.72)
Women	14 (54)	160 (58)	0.84 (0.40 to 1.76)
Age ≤40 years	15 (58)	128 (47)	1.50 (0.71 to 3.15)
Has medically unexplained symptoms	12 (46)	78 (28)	1.62 (1.03 to 2.56)
Has non-progressive neurological disease†	12 (46)	153 (56)	0.83 (0.54 to 1.27)
Has potentially progressive neurological disease‡	2 (8)	43 (16)	0.49 (0.13 to 1.91)
Major depressive disorder diagnosed	23 (88)	54 (20)	4.49 (3.40 to 5.92)
Identified as needing psychiatric assessment:§			
By general practitioner	8 (31)	43 (16)	NA
By neurologist	12 (46)	40 (15)	NA
Not identified	11 (42)	170 (62)	NA

NA=not applicable.

*Prevalence is 9% (95% CI 6% to 12%).

†Includes conditions such as epilepsy, headache, migraine, and neuropathy.

‡Includes conditions such as multiple sclerosis, Parkinson's disease, and brain tumours.

§Not specifically identified as being suicidal.

Comment

Our findings do not support the view that suicidal ideation occurring in neurology patients is largely a rational response to progressive physical illness. Instead, the findings underscore the importance of major depressive disorder in influencing the ways that medically ill patients think about their illnesses and themselves.

The prevalence of 9% (95% confidence interval 6% to 12%) for significant suicidal ideation described in this study is higher than the 2-3% described as occurring in primary care and community settings in the United States.⁵ We are unaware of any data that indicate what proportion of those who are medically ill

and who report suicidal ideation actually go on to kill themselves. None the less, suicidal ideation of the type considered important in this study is clinically significant: it would be taken seriously during a psychiatric consultation.

It is encouraging that 58% of those patients with suicidal ideation were identified by either the general practitioner or the neurologist as needing psychiatric or psychological assessment or treatment. However, general practitioners and neurologists did not always identify the same patients. This highlights the importance of assessing the mental state of medically ill patients and the importance of communication of the findings between general practitioners and specialists.

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Competing interests: None declared.

- 1 Diekstra RFW. The epidemiology of suicide and parasuicide. *Acta Psychiatr Scand* 1993;371(suppl):9-20.
- 2 Feinstein A. Multiple sclerosis, depression, and suicide: clinicians should pay more attention to psychopathology. *BMJ* 1997;315:691-2.
- 3 Carson AJ, Ringbauer B, MacKenzie L, Warlow C, Sharpe M. Neurological disease, emotional disorder and disability: they are related. A study of 300 consecutive new referrals to neurology outpatient clinics. *J Neurol Neurosurg Psychiatry* 2000;68:202-6.
- 4 Spitzer RL, Williams JB, Kroenke K, Linzer M, deGruy FV, Hahn SR, et al. Utility of a new procedure for diagnosing mental disorders in primary care. The PRIME-MD 1000 study. *JAMA* 1994;272:1749-56.
- 5 Paykel ES, Myers JK, Lindenthal JJ, Tanner J. Suicidal feelings in the general population. A prevalence study. *Br J Psychiatry* 1974;124:460-9. (Accepted 24 February 2000)

Home collection of urine for culture from infants by three methods: survey of parents' preferences and bacterial contamination rates

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Urinary tract infection is common in childhood. Infants are most likely to scar and often have non-specific symptoms. Because of practical difficulties with collecting urine, samples are often not obtained.¹ Most samples are collected by parents,² yet nobody has sought parents' views on available methods. We assessed contamination rates and parents' opinions of three common methods used at home.

Subject, methods, and results

Parents of children aged 1 to 18 months volunteered to collect urine at home by pads, bags, and clean catch in a randomised order, on one day. The study had ethics committee approval. Demonstrations and instruction sheets were given. Parents washed their hands before each procedure and the child's perineum before each collection. Pads (Newcastle sterile urine collection packs, Ontex UK, Corby) were placed inside the nappy and checked every 10 minutes until wet (but not soiled), then

urine aspirated with a syringe. Bags (Hollister U-Bag, Hollister, Libertyville, IL) were applied and inspected every 10 minutes and removed to decant the urine. For clean catch samples, infants were nursed with a sterile bottle ready. Samples were immediately instilled on to dipslides (Till-U-Test, Dimanco, Bedfordshire) with sterile swabsticks and returned with forms recording parents' collection times, comments, and rankings. Equipment costs were: pads 40 pence for 10 (or 59p for a pack containing syringe, bottle, and two pads); bag 89p; sterile bottle 7p; dipslide and swabstick 59p.

Forty four parents attempted collections (29 boys, median age 4 months, range 1 to 18 months). No samples were obtained from one baby with diarrhoea, and no other child had a urine infection. Bacterial counts were <10⁴/ml (typically reported as "insignificant" or "no growth") from 31 (70%) pads, 29 (66%) bags, and 33 (75%) clean catch collections. Seven samples from pads, eight from bags, and one from clean catch collection had contamination (>10⁴/ml of one or more

Assessments by 44 parents of three methods of home urine collection

Parents' assessments	No of parents:		
	Pad	Bag	Clean catch
Preference order			
First	21	18	5
Second	19	12	13
Third	4	14	26
Open comments			
Positive			
Easy, hygienic, or quick	25	24	8
Comfortable for child	10	3	0
Negative			
Uncomfortable or distressing	1	26	3
Fiddly or messy	9	10	20
Impractical or time consuming	10	0	36
Difficult to get urine out of pad	8	—	—
Red marks left on skin	—	11	—
Too much trouble—gave up (boys)	1 (0)	4 (3)	9 (5)

organism). Nine samples (8%) from five children (four boys) grew $>10^5$ coliforms/ml, suggesting infection. However, this was excluded by sterile samples collected on the same day or on immediate repeat in hospital.

Parents found the pads and bags easy to use and preferred them to clean catch collections (table) for both sexes. The pad was considered comfortable, whereas the bag was distressing, particularly on removal, often leaking and leaving red marks. Some found extracting the urine from the pad or emptying it from the bag to be awkward. Most parents complained that clean catch collections were time consuming and often messy; nine gave up after prolonged attempts. Five parents whose infants voided immediately ranked it best. The median collection time was 25 minutes for each method, but parents resented constraining their children this long for clean catch collections.

Comment

This is the first study of parents' views of infant urine collection methods. Pad, bag, and clean catch samples were equally effective at excluding an infection; variations in contamination rates balanced collection failures. Most parents disliked clean catch collections; their views should be heeded. Most preferred pads to bags, and they are cheaper. They also found inoculating dipslides with swabsticks easy; this technique may have contributed to their relatively low contamination rates.^{3,4}

Since Kass suggested a diagnostic cut off of a single bacterial species cultured at $>10^5$ /ml, it has been widely taken as proof of a urine infection and assumed not to occur from skin contamination, even though his study⁵ and others³ recorded similar false positive rates to ours. False positive results potentially lead to inappropriate treatment and imaging. Suprapubic puncture is an unrealistic alternative in primary care. Although collecting multiple samples would reduce the false positive rate, it might delay antibiotic treatment.

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- Jadresic L, Cartwright K, Cowie N, Witcombe B, Stevens D. Investigation of urinary tract infection in childhood. *BMJ* 1993;307:761-4.
- Vernon S, Foo CK, Coulthard MG. General practice management of children with urinary tract infection: an audit in the former Northern region. *Br J Gen Pract* 1997;47:297-300.
- Hardy JD, Furnell PM, Brumfit W. Comparison of sterile bag, clean catch and suprapubic aspiration in the diagnosis of urinary infection in early childhood. *Br J Urol* 1976;48:279-83.
- Macfarlane PI, Houghton C, Hughes C. Pad urine collection for early childhood urinary-tract infection. *Lancet* 1999;354:571.
- Kass EH. Asymptomatic infections of the urinary tract. *Trans Assoc Am Phys* 1956;69:56-63.

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Corrections and clarifications

ABC of vascular disease: Vascular complications of diabetes

An error crept into a figure in this article by Richard Donnelly and colleagues (15 April, pp 1062-6). In the Kaplan-Meier plot at the top of p 1065, the definition of less tight control should be $<180/105$ (not $<180/85$) mm Hg.

Mimerva

Minerva slipped up on two names, one personal and one taxonomic, in the picture article in the issue of 18 March (p 814). The third author's name is R Whitfield; the culture grown was *Mycobacterium marinum*.

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