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time on waiting lists as younger people. It is, however, difficult to be clear about this as the numbers referred, particularly in the over 65-year-old age group, are tiny. Patients in the 55–65-year-old group, while more commonly referred are still underrepresented in demographic terms. This reflects the recent Gallup survey for Age Concern (Gallup & Age Concern, 1999) finding that one in 10 people had noticed a difference in the way they were treated in the NHS after their 50th birthday. This suggests that there is a pressing need for education about the availability of psychotherapy for this population and their capacity to use it, particularly within old age psychiatrists and physicians.

There is also some suggestion that psychotherapists are either unaware of the extent of the needs of this group, or fearful that their services would be swamped if a full acknowledgement of these needs was made. The majority of respondents were not able to envisage fulfilling these needs within services as they presently stand. These needs are growing. The percentage of the population in these age bands is forecast to rise steadily with predictions that 41% of the adult (over 16) population will be over 55 in 2031 (Carnegie Inquiry Report, 1993). This has obvious resource implications.

A more hopeful reading of this study is that psychotherapeutic needs of this patient group are being met, but psychotherapy departments are unaware of this activity. On balance, however, this seems a vain hope. While respondents were mindful of the lack of needs-based assessment, they also demonstrated sufficient knowledge of local old age psychiatry services to make informed comments about service provision. It is also possible that units offering adequate services were either not contacted or did not respond. Sadly, a more realistic reflection of the present state of psychotherapy provision for this group might be contained in the comment of one respondent that "they just get forgotten". It is worrying that some of this group of patients believe that this 'forgetting' is a more active process of discrimination (Gallup & Age Concern, 1999). It seems timely to begin to hold them in mind.

References

BOUKLAS, G. (1997) *Psychotherapy with the Elderly: Becoming Methuselah's Echo*. Northvale, NJ: Jason Aronson.

CARNEGIE INQUIRY REPORT (1993) *Life, Work and Livelihood in the Third Age*. Dunfermline: Carnegie United Kingdom Trust.

COHEN, N. A. (1982) On loneliness and the ageing process. *International Journal of Psychoanalysis*, **63**, 149–155.

DEPARTMENT OF HEALTH (1996) *NHS Psychotherapy Services in England: Review of Strategic Policy*. London: HMSO.

FREUD, S. (1905) *On Psychotherapy*. Standard edition, Vol 7. London: Hogarth Press.

GALLUP & AGE CONCERN (1999) *Survey into Age Discrimination in the NHS*. London: Age Concern.

GARNER, J. (1999) Psychotherapy and old age psychiatry. *Psychiatric Bulletin*, **23**, 149–153.

HALEY, W. (1996) The medical context of psychotherapy with the elderly. In *A Guide to Psychotherapy and Ageing: Effective Clinical Interventions in a Life-Stage Context* (eds S. H. Zarit, B. G. Knight *et al*), pp. 221–239. Washington, DC: American Psychological Association.

HESS, N. (1987) King Lear and some anxieties of old age. *British Journal of Medical Psychology*, **60**, 209–215.

HILDEBRAND, H. P. (1988) The other side of the wall: a psychoanalytic study of creativity in later life. *International Review of Psychoanalysis*, **15**, 353–363.

— (1990) Towards a psychodynamic understanding of later life. In *Clinical and Scientific Psychogeriatrics* (eds M. Bergner & I. Sandford). York: Springer Publishing Co.

HUNTER, A. J. G. (1989) Reflections on psychotherapy with ageing people, individually and in groups. *British Journal of Psychiatry*, **154**, 250–252.

KING, P. (1974) Notes on the psychoanalysis of older patients. *Journal of Analytical Psychology*, **19**, 22–37.

— (1980) The life cycle as indicated by the nature of the transference in the psychoanalysis of the middle aged and elderly. *International Journal of Psychoanalysis*, **61**, 153–160.

MYERS, W. A. (1984) *Dynamic Therapy of the Older Adult*. New York: Jason Aronson.

NEMIROFF, R. A. & COLARUSSO, C. A. (1985) *The Race Against Time*. New York. Plenum.

PORTER, R. (1991) Psychotherapy with the elderly. In *Textbook of Psychotherapy and Psychiatric Practice* (ed. J. Holmes). London: Churchill Livingstone.

SADAVOY, J. (1994) Integrated Psychotherapy for the elderly. *Canadian Journal of Psychiatry*, **39**, 19–26.

— & LESZCZ, M. (1987) *Treating the Elderly with Psychotherapy*. Madison, CT: International Universities Press.

SEGAL, H. (1958) Fear of death: notes on the analysis of an old man. In *The Work of Hanna Segal*. London: Jason Aronson.

TERRY, P. (1997) *Counselling Older People and Their Carers*. London: Macmillan.

Siobhan Murphy Senior Lecturer and Consultant Psychotherapist, Department of Psychological Medicine, St Bartholomew's Hospital, West Smithfield, London EC1A 7BE

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J. LAIDLAW, P. BENTHAM, G. KHAN, V. STAPLES, A. DHARIWAL, B. COOPE, E. DAY, C. FEAR, C. MARLEY AND J. STEMMAN

A comparison of stimulus dosing methods for electroconvulsive therapy

AIMS AND METHODS

A prospective study comparing initial electroconvulsive therapy treatment doses determined by empirical dose titration with estimates derived from two simple dose prediction methods and a fixed-dose regimen (275 mC).

RESULTS

Thirty-three patients had seizure thresholds between 25 mC and 403 mC. The dose titration method led to a mean initial treatment dose of 195 mC that was intermediate between those predicted by the age method (275 mC) and the half-age method (137 mC). Estimates were within acceptable limits in 33% of cases for the age method, 64% for the half-age method and 40% for the fixed-dose method.

CLINICAL IMPLICATIONS

Either dose prediction or dose titration methods may be more appropriate in different clinical situations. The half-age method appears to be a more accurate predictor of optimum initial treatment dose.

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The Royal College of Psychiatrists' guidelines advocate that the electrical dose given in electroconvulsive therapy (ECT) is adjusted for each patient to take into account variations in seizure threshold (Royal College of Psychiatrists, 1995). This technique is called stimulus dosing and two methods are used. Dose titration involves the application of increasing doses of electricity until the seizure threshold is determined. The alternative method of dose prediction involves giving a predetermined dose derived from an algorithm taking into account factors known to significantly influence seizure threshold. Pippard (1992) found, however, British ECT clinics commonly use a standard 'fixed dose' to treat all patients.

Determining the stimulus dose may be important for several reasons. Sub-convulsive stimuli are clearly ineffective but marginally supra-threshold stimuli, despite producing seizures of apparently adequate length, are very poor at relieving depressive symptoms. The use of moderately supra-threshold stimuli significantly improves the efficacy of unilateral ECT and leads to a faster response to bilateral ECT. Increasing stimulus magnitude is also associated with a worsening of cognitive side-effects. Both efficacy and cognitive side-effects appear to be more closely related to the degree to which the stimulus exceeds the patient's seizure threshold rather than to the absolute magnitude of the electrical dose (Sackeim *et al*, 1993). Utilising a MECTA SR1 machine, Enns & Karvelas (1995) found empirical titration to be a more consistent method of selecting an electrical dose than predictive methods. This study aimed to compare initial treatment dose determined by empirical dose titration with two simple dose prediction methods and a fixed-dose regimen utilising a Thymatron DGX constant-current machine.

The study

The study was conducted at the Queen Elizabeth Psychiatric Hospital, Birmingham. Subjects were recruited for a study investigating factors influencing the rate of onset of the antidepressant effect of ECT. Subjects were consecutive, voluntary, English-speaking patients, aged over 17 years, referred for ECT and giving informed consent for the main study. They all met DSM–IV criteria for major depressive episode (American Psychiatric Association, 1994) and had not had ECT within the previous three months. Puerperal depression was excluded.

No pre-medication was used and patients were anaesthetised with methohexitone (0.75 mg/kg) and paralysed with suxamethonium (0.5 mg/kg), the doses being adjusted according to clinical need. Atropine was not given routinely. Patients were hyperoxygenated prior to the initial stimulation. The research method for dose titration was a modification of that described by Lock in the *ECT Handbook* (Royal College of Psychiatrists, 1995). It was developed to accurately determine seizure threshold while keeping anaesthesia brief and maximising the chance of a patient having a therapeutic seizure during the first treatment session. Dose increments between different levels are initially small, increasing progressively in magnitude to cover the full range of the machine taking into account the proportionate relationship between stimulus dose and clinical outcome.

Table 1. Stimulus levels for dose titration

Level	Percentage energy	mC
1	5	25
2	10	50
3	15	76
4	25	126
5	40	201
6	55	277
7	80	403
8	100	504
9	150	756
10	200	1008

Starting levels for subjects (Table 1) were as follows: female unilateral (Level 1), male unilateral and female bilateral (Level 2), male bilateral (Level 3). Doses were increased by one level if patients were aged over 65 years or taking anticonvulsant medication. Seizure threshold was defined as the minimum electrical dose required to produce a generalised seizure lasting more than 25 seconds as measured by a single channel electroencephalogram recording via a left fronto-mastoid electrode placement. Following the first stimulation the electrical dose was increased by one level if there was no seizure (similarly for inadequate seizures). If there was no seizure on the second application the stimulus was increased by three levels for the final application. If the patient failed to have a seizure at the first treatment session, the titration process was continued at the next starting one level higher. If the patient previously had a seizure only on the third application, then the dose titration process was continued starting two levels lower. The dose titration process was similarly continued for a third ECT session if necessary. Subsequently initial treatment doses were set at seizure threshold plus one level for bilateral ECT and seizure threshold plus two levels for unilateral ECT.

Two dose prediction methods were compared with the research protocol. The age method described in the Thymatron manual (Swartz & Abrams, 1989) involves setting the stimulus control dial (percentage energy) to the patient's age. The second half-age method is similar but with the dose set to one half of the patient's age (Petrides & Fink, 1996). In a previous audit (Bentham *et al*, 1998) 97% of stimuli were given with a dose of 275 mC (50% above mean seizure threshold), comparisons were also made with this fixed-dose regimen.

Findings

The study involved 10 males and 23 females with a mean age of 54.4 years (range 19–83 years). Seven subjects had unilateral and 26 bilateral treatment. Ten subjects required more than one stimulation during the determination of seizure threshold, although all subjects had their seizure threshold estimated by the end of the first

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Table 2. Seizure threshold and initial treatment doses determined by three methods (values in mC)

	Seizure threshold determined by research protocol	Research protocol initial treatment dose	Age method initial treatment dose	Half-age method initial treatment dose
	Mean (s.d.) Range	Mean (s.d.) Range	Mean (s.d.) Range	Mean (s.d.) Range
All subjects (*n*=33)	110.8 82.8 25–403	195.4 133.4 76–504	274.9 109.7 100–420	137.4 54.9 50–210
Males (*n*=10)	123.5 61.0 50–277	223.9 107.3 126–504	324.0 84.6 170–405	162.0 42.3 85–202
Females (*n*=23)	105.3 91.3 25–403	183.0 143.7 76–504	253.5 114.4 110–420	126.8 57.2 55–210
Unilateral (*n*=7)	111.4 114.2 25–277	241.3 191.7 76–504	185.7 53.0 110–255	92.7 26.9 55–127
Bilateral (*n*=26)	110.6 75.0 50–403	183.0 114.9 76–504	299.0 108.9 100–420	150.0 53.8 50–210

ECT session. In other words, the research protocol initial stimulus dose under-estimated seizure threshold in just under one-third of subjects and overestimated or accurately predicted it in the remaining two-thirds. The research protocol led to a mean initial treatment dose of 195.4 mC (see Table 2). This was significantly lower than that derived by the age method (274.9 mC) (t=7.89, $P<0.0001$) and higher than that derived by the half-age method (137.4 mC) (t=1.75, P=0.09), as measured by a two-tailed paired t-test.

Discussion

Clinical opinion is currently divided on what is the most appropriate method of determining the stimulus dose for ECT. A survey of ECT practitioners in the USA reported that 12% used fixed-dose strategies, 39% dose titration and 49% formula-based methods (Farah & McCall, 1993). Empirical dose titration is currently the most accurate method for determining seizure threshold allowing the initial treatment stimulus to be set with similar accuracy within a 'therapeutic window' for both unilateral (2.25–4.5 times seizure threshold) and bilateral ECT (1.5–2.25 times seizure threshold). The ability of a dose prediction method to ensure an appropriately supra-threshold treatment stimulus is dependent entirely on its ability to accurately predict seizure threshold for an individual patient. In this study, the age method would have given an excessive dose in 20 subjects (60.6%) and resulted in a sub-threshold dose in up to two subjects (6.1%). In contrast, the half-age method would have led to an excessive dose in only four subjects (12.1%) and to a sub-threshold dose in up to eight subjects (24.2%). Only three subjects (9.0%) received 277 mC as an initial treatment dose and a fixed-dose regimen would have led to an inadequate dose in one subject (3.0%) and an excessive dose in 19 subjects (57.5%). It is probable that the experimental protocol over estimated the seizure threshold in some individuals because of its pragmatic design, however, the mean initial stimulus dose was fairly low and the range of seizure thresholds is consistent with other studies.

The accuracy of dose prediction methods in predicting initial seizure threshold on an individual patient basis is poor with only 30–50% of the variance being explained by multivariate models and much less with univariate paradigms (Weiner, 1997). The clinical relevance of this inherent inaccuracy is dependent on the distribution of seizure thresholds in the treatment population and the mode of ECT administration. Forty-fold variations in seizure threshold have been reported in research populations, however, the range in clinical groups has been consistently reported as between six- and 12-fold (Weiner, 1997). The range may be misleading as it is likely to reflect sample size and the standard deviation may be a more informative measure. If the spread of seizure thresholds is relatively narrow then dose titration may be unnecessary and a simple dose prediction method would be adequate for most patients. Dose titration could be reserved for situations where there is an increased likelihood of extreme variations in seizure threshold or where the initial response to a predicted dose is poor in terms of antidepressant effect or impaired cognition. Dose titration could be avoided in patients where there is increased anaesthetic risk, particularly if they were thought susceptible to bradyarrythmias.

References

AMERICAN PSYCHIATRIC ASSOCIATION (1994) *Diagnostic and Statistical Manual of Mental Disorders* (4th edn) (DSM–IV). Washington, DC: American Psychiatric Association.

BENTHAM, P., CALLINAN, L., RODRIGUEZ-FERERRA, S., *et al* (1998) Electroconvulsive therapy audit. *Journal of Clinical Effectiveness*, **3**, 72–74.

https://doi.org/10.1192/pb.24.5.184 Published online by Cambridge University Press

ENNS, M. & KARVELAS, L. (1995) Electrical dose titration for electroconvulsive therapy: a comparison of dose prediction methods. *Convulsive Therapy*, **11**, 86–93.

FARAH, A. & McCALL, W.V. (1993) Electroconvulsive therapy stimulus dosing: a survey of contemporary practices. *Convulsive Therapy*, **9**, 90–94.

PETRIDES, G. & FINK, M. (1996) The 'half-age' stimulation strategy for ECT dosing. *Convulsive Therapy*, **12**, 138–146.

PIPPARD, J. (1992) Audit of electroconvulsive therapy in two National Health Service regions. *British Journal of Psychiatry*, **160**, 621–637.

ROYAL COLLEGE OF PSYCHIATRISTS (1995) *The ECT Handbook. The Second Report of The Royal College of Psychiatrists Special Committee on ECT.* Council Report CR39. London: Royal College of Psychiatrists.

SACKEIM, H. A., PRUDIC, J., DEVANAND, D. P., *et al* (1993) Effects of stimulus intensity and electrode placement on the efficacy and cognitive effects of electroconvulsive therapy. *New England Journal of Medicine*, **328**, 839–848.

SWARTZ, C. M. & ABRAMS, R. (1989) *ECT Instruction Manual* (3rd edn). Lake Bluff, IL: Somatics Inc.

WEINER, R. D. (1997) Stimulus dosing with ECT: to titrate or not to titrate – that is the question. *Convulsive Therapy*, **13**, 7–9.

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***J. Laidlaw** Consultant Psychiatrist, Brownhill Centre, Swindon Road, Cheltenham GL51 9EZ, **P. Bentham** Consultant Psychiatrist, **G. Khan** Senior Registrar, **V. Staples** Senior Registrar, **A. Dhariwal** Senior Registrar, **B. Coope** Senior Registrar, **E. Day** Senior House Officer, Queen Elizabeth Psychiatric Hospital, Birmingham, **C. Fear** Senior House Officer, Wotton Lawn, Gloucester, **C. Marley** Senior House Officer, **J. Stemman** Senior Registrar, Queen Elizabeth Psychiatric Hospital, Birmingham

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MATTHEW STEPHENSON AND ALISON PUFFETT

Special interest sessions in psychiatry

Survey of one higher training scheme

AIMS AND METHOD

While specialist registrars in psychiatry are entitled to spend one-fifth of their working week engaged in special interest sessions, little has been published on how the time is used. In order to describe what happens in practice, we conducted a semi-structured telephone survey of trainees on the South-East Thames Higher Training Scheme in psychiatry.

RESULTS

The results indicate that while most trainees (78%) were satisfied with their use of special interest time, those using two sessions regularly for a defined training purpose were in the minority.

CLINICAL IMPLICATIONS

Use of special interest sessions is generally good in the scheme surveyed. If uptake of sessions is to be improved, there needs to be even better local support as well as existing national recognition of the educational rights of trainees. The local support should be at the level of both trust and training scheme.

Career opportunities in psychiatry have evolved over time, with an increasing number of posts advertised as having a 'special responsibility' or 'special interest' in named sub-specialities. Appointment committees take guidance from the Royal College of Psychiatrists regarding the training and clinical experience that might be reasonably expected from candidates during their period of specialist training, but these are by no means fixed or mandatory. The Joint Committee on Higher Psychiatric Training (1995) provides some guidelines on the use of special interest time which may allow trainees to develop sufficient clinical experience in sub-specialities not offered in yearly core placements. Because special interest sessions often conflict with demands on trainees' time in busy clinical placements and because of the general level of uncertainty regarding the use of special interest time by juniors, we chose to conduct a survey of all specialist registrars and senior registrars on the South-East Thames regional scheme. Our aim was to find out how special interest time was being used and to provide a qualitative description of the opinions of trainees towards the value and difficulties in taking the sessions.

The study

All trainees in the old age and general adult South-East Thames Higher Training Scheme for psychiatry were invited to be interviewed over the telephone by one of the authors. The interview was semi-structured and used open and closed questions focused on the use, content and applicability of special interest sessions. Participants were given an opportunity to comment on how service demands had impacted on their training needs and asked to make suggestions for further improvements in the scheme.

A total of 34 trainees were invited to participate, of these two were on maternity leave at the time of the study, two were acting as locum consultants and three could not be contacted or did not wish to participate. At the time of the study M.S. and A.P. were specialist registrars on the scheme surveyed.

Findings

Career aims

A total of 27 doctors were surveyed of whom four (15%) were old age trainees, and seven (26%) hoped for dual accreditation with five in adult forensic psychiatry and two in adult psychiatry/psychiatry of learning disabilities.

Use of special interest time

Twenty (74%) trainees were taking special interest sessions on a regular basis, of these nine (33.3%) were

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