

After eight episodes of rejection urethral bleeding occurred; in one case the associated septicaemia resulted in death.

Comment

Rejection of catheters is generally thought to be due to patients pulling out their catheters, but we found circumstantial evidence for this in only one third of cases. Some catheters with smaller balloons drop out spontaneously, perhaps owing to laxity of the pelvic floor or urethral dilatation caused by repeated catheterisation, and others are expelled forcibly, presumably owing to uninhibited contractions of the bladder. Urinary catheters may therefore drop out, be pushed out, or be pulled out.

The life expectancy of catheters in this group of patients suggests the type of catheter that should be used. We recommend cheaper latex catheters and think that expensive "long life" silicon catheters are inappropriate in most long stay patients.

Rejection of catheters is common in poorly mobile old people with cognitive impairment. It is associated with urethral trauma and may result in septicaemia. Long term catheterisation should therefore be considered only when other methods to promote continence and provide comfort have failed.³ Further work is needed to determine why some patients pull out their catheters and whether bladder stabilising drugs might reduce episodes of spontaneous rejection of catheters.

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Effects of aerobic exercise on depression: a controlled study

The purpose of the present study was to assess the antidepressive effect of systematic aerobic exercise in psychiatric patients in hospital.

Patients, methods, and results

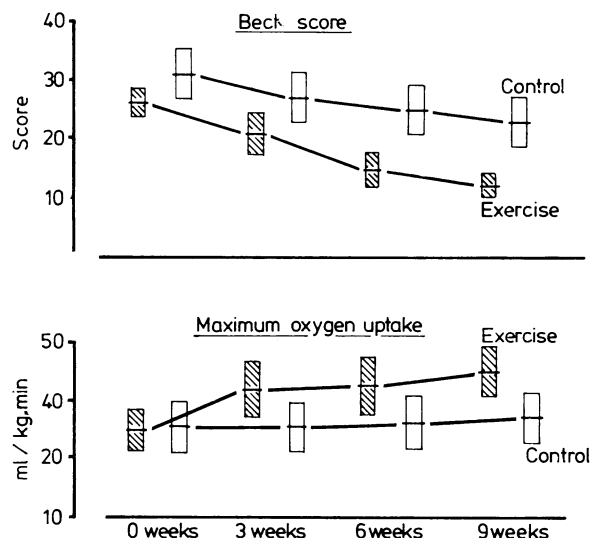
We studied 43 patients with depression of both sexes, aged 17-60 (mean 40). They satisfied the criteria of the Diagnostic and Statistical Manual of Mental Disorders for major depression (single episode and recurrent). Psychotic patients and those with physical contraindications to exercise were excluded. All patients were receiving individual psychotherapy and occupational therapy and were in hospital throughout the study. Fourteen in the control group and nine in the training group were taking tricyclic antidepressants.

Patients were randomly allocated to a training group and a control group by block randomisation with respect to sex. For nine weeks the training group underwent a programme of systematic aerobic exercise consisting of one hour of training with an instructor three times a week at 50-70% of maximum aerobic capacity. The control group attended occupational therapy while the training group exercised, but otherwise the programme of treatment for the two groups was as similar as possible.

The effect variables (depression and physical condition) were registered at entry into the study and after three, six, and nine weeks. Depression was assessed with the Beck depression inventory¹ and the comprehensive psychopathological rating scale depression subscale² using a 10 cm visual analogue scale. Physical condition was assessed by ergometer bicycle testing, measuring maximum oxygen uptake according to Astrand's indirect method.³ A one sided Wilcoxon's rank sum test was used in the statistical analysis of mean differences between the groups. For patients who stopped treatment between weeks 6 and 9 their score at week 9 was taken as being the same as their score at week 6. The efficacy of treatment was regarded as the difference in variables at entry to the trial and at nine weeks.

Six patients dropped out of the study (four in the training group and two in the control group), but the withdrawals were not related to treatment. Thus 43 patients completed the study (24 in the training group and 19 in the control group). There were no significant differences between the groups in any of the variables at inclusion in the study. Mean reductions in the comprehensive psychopathological rating scale and Beck scores were significantly larger in the training group (both $p < 0.05$), and mean maximum oxygen uptake was significantly increased in the training group ($p < 0.001$). For all the items measured with the comprehensive psychopathological rating scale the mean reductions were larger in the training group.

For patients in the training group with a small increase in maximum oxygen uptake (< 15%) the antidepressive effect was similar to that in the control group. Patients with a moderate (15-30%) or large (> 30%) increase in maximum oxygen uptake experienced similar, larger antidepressive effects.



Mean Beck score and maximum oxygen uptake, with 95% confidence intervals.

Comment

The reduction in depression scores and the increase in maximum oxygen uptake were significantly larger in the training group. This corresponds with findings in mildly depressed patients who are not in hospital.^{4,5}

The scores at nine weeks were missing in only four patients (two in each treatment group), and thus taking the score at nine weeks to be the same as that at six weeks in these patients did not affect the results of this trial. The study suggests that a moderate increase in maximum oxygen uptake (15-30%) was sufficient to obtain an antidepressive effect from the training programme.

As studies on exercise and depression cannot be performed blind factors other than exercise might have contributed to the different results in the two groups. Such factors might be extra attention and the enthusiasm of the coach. We still conclude, however, that a training programme has a substantial antidepressive effect in psychiatric patients up to 60 years old in hospital.

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