Mental health

Whole body hyperthermia for depression

Whole body hyperthermia (WBH) shows promise as an effective treatment for depression, a randomised double-blind, sham-controlled trial, published in *JAMA Psychiatry*, has concluded.

A total of 34 participants aged 18-65 with DSM-IV major depression were randomised to receive either a single session of WBH or a sham session. Depression severity was assessed at baseline and during the six-week follow-up period using the 17-item Hamilton Depression Rating Scale (HDRS).

Participants assigned to the active intervention were heated to a target core body temperature of 38.5° C using infrared lamps. The sham session mimicked all aspects of WBH except intense heat and nearly three quarters of those receiving sham treatment (71%) believed that they had received WBH.

Overall, 29 participants completed at least one post-intervention assessment and were included in a modified intention-to-treat analysis. Compared with the sham group, the active WBH group had significantly lower HDRS scores throughout the follow-up period:

- Week 1: -6.53 (95% CI: -9.90 to -3.16)
- Week 2: -6.35 (95% CI: -9.95 to -2.74)
- Week 4: -4.50 (95% CI: -8.17 to -0.84)
- Week 6: -4.27 (95% CI: -7.94 to -0.61)

Adverse events in both groups were mild. However, elderly patients and those with medical conditions were excluded from the study.

WBH increases heart rate and cardiac output with the potential risk of inducing myocardial ischaemia, heart failure or arrhythmias in susceptible patients.[1]

The wide confidence intervals reflect the small sample size. NICE suggested that a treatment-placebo difference of 3 points on the HDRS can be used as a criterion of clinical significance;[2] the lower limit of the 95% confidence interval exceeded this threshold only at the week 1 assessment. Further larger trials are needed to justify the claim that a single session of WBH provides sustained therapeutic benefit.

It is suggested that intense heat stimulates a thermosensory pathway which projects via the spinothalamic tracts and a relay in the brain stem reticular formation to the serotonergic raphe nuclei. There is evidence of reduced activity in this pathway in patients with major depressive disorder.[3]

Atypical depression is characterised by mood reactivity and comforting behaviours, in particular consumption of comfort food (chocolate, cake) and warming up behaviours such as having a hot bath.[4] WBH might be particularly effective for patients with this subtype of depression.

If we were to offer our patients a choice of antidepressants, CBT, exercise or a sauna, I suspect many would choose the latter. However, I do not think NICE is likely to endorse WBH any time soon. In the meantime, there would appear to be no harm in chocolate and hot baths for those patients who find them beneficial.

DR PHILLIP BLAND

Janssen CW, Lowry CA, Mehl MR et al. Whole-body hyperthermia for the treatment of major depressive disorder. A randomized clinical trial. *JAMA Psychiatry* 2016;73:789-95

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Obstetrics and gynaecology

Use of infant simulators does not reduce teenage pregnancies

Providing teenage girls with an infant simulator doll for a few days appeared to increase rather than decrease the risk of pregnancy, in a study from Western Australia.

The Australian Virtual Infant Parenting (VIP) programme was based on the American 'Baby Think It Over' programme and was aimed at girls aged 13 to 15. A total of 66 schools were invited to participate and 57 enrolled in the study. The schools were randomised to the VIP or control group.

The 1,267 girls on the VIP programme had four educational sessions in small groups with a school nurse, and were given a comprehensive workbook and a video documentary of teenage mothers relating their experience, and instructions on the infant simulator. They were provided with an infant simulator on a Friday afternoon to experience life as a virtual mother for a weekend.

The 1,567 girls in the control group were given usual advice through the standard curriculum.

The demography of the two groups of girls was broadly comparable. Slightly more control group girls had ever drunk alcohol (54% vs 39%) and had ever had sex (18% vs 15%) than VIP programme girls. Slightly fewer had ever been responsible for a baby (52% vs 59%). Educational and socioeconomic status was higher in control group girls.

The primary endpoint was pregnancy (live birth, stillbirth or induced abortion). There were 210

pregnancies in the 1,267 VIP programme girls (17%), and 168 among the 1,567 control group girls (11%) (chi-squared 20.8, P = 0.000044). There were 97 and 67 births respectively (chi-squared 14.7, P = 0.00044), and 113 and 101 terminations respectively (chi-squared 6.1, P = 0.013). The relative risk of pregnancy in VIP programme girls, adjusted for the variables mentioned above, was 1.36 (P = 0.0031).

Although in recent years the teenage pregnancy rate has been dropping, conception still occurred in 4,160 girls under the age of 16 in England and Wales in 2014.[1] Various health promotion programmes have tried to reduce this rate still further.

The simulator is a sophisticated life-like baby doll that replicates the sleeping and feeding patterns of a real baby. The rational is that girls will find the simulated reality of life with a baby sufficiently intrusive into their social life and personal freedom that it will deter them from risking conception.

Quite why exposure to an infant simulator appears to increase the risk of teen pregnancy is unclear. The authors quote other studies where the investigators speculate that some girls believe that caring for a real baby would be easier than caring for the simulator, and that others may have enjoyed the attention they received while caring for the simulator.

DR CHRIS BARCLAY

Brinkman SA, Johnson SE, Codde JP et al. Efficacy of infant simulator programmes to prevent teenage pregnancy: a school-based cluster randomised controlled trial in Western Australia. *Lancet* 2016. DOI: http://dx.doi.org/10.1016/S0140-6736(16)30384-1

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1 www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/conceptionandfertilityrates/bulletins/conceptionstatistics/2014#main-points

Cardiovascular disease

Will a cup of tea a day keep the cardiologist away?

Moderate tea consumption was associated with a slower progression of coronary artery calcium and lower incidence of major cardiovascular events, a study published in the *American Journal of Medicine* has found. Regular coffee consumption had neither protective nor adverse effects.

The tea and coffee drinking habits of 6,508 participants in the Multi-Ethnic Study of Atherosclerosis were analysed. Intake of each drink was classified as never, occasional (< 1 cup/day), and regular (≥ 1 cup/day). A coronary artery calcium progression ratio was derived and data analysed for any association between beverage intake and incident cardiovascular events.

The study participants were followed up for a median of 5.3 years for coronary artery calcium and 11.1 years for cardiovascular events.

Those who regularly drank tea (≥ 1 cup/day) had a slower progression of coronary artery calcium compared with never drinkers after multivariable adjustment. This correlated with a statistically significant lower incidence of cardiovascular events for ≥ 1 cup/day drinkers: hazard ratio HR 0.71 (95% CI: 0.53-0.95).

With respect to coffee, compared with never coffee drinkers, regular coffee intake (≥ 1 cup/day) was not statistically associated with coronary artery calcium progression or cardiovascular events: HR 0.97 (95% CI: 0.78-1.20).

The authors conclude that moderate tea drinkers had slower progression of coronary artery calcium and reduced risk for cardiovascular events but that these findings did not apply to coffee. However, no harmful affect was found from moderate coffee intake.

It would appear that more research is required to try to understand the potentially protective nature of moderate tea consumption.

DR PETER SAVILL

Miller PE, Zhao D, Frazier-Wood AC et al. Associations of coffee, tea, and caffeine intake with coronary artery calcification and cardiovascular events. *Am J Med* 2016 Sep 15. pii: S0002-9343(16)30925-1. doi: 10.1016/j.amjmed.2016.08.038.

Sexual health

Saliva may be a vehicle for gonorrhoea transmission

Almost half of men who have sex with men (MSM) with positive cultures for gonorrhoea from the pharnyx also had positive saliva samples, in a study from Australia, suggesting that saliva may act as a vehicle for transmission of the infection.

MSM who attended Melbourne Sexual Health Centre, between October 2014 and March 2015 were screened for pharyngeal gonorrhoea using a throat swab for cultures. A total of 33 MSM with positive cultures were treated and on the day of treatment, two further throat swabs were taken, one for culture and a second for NAAT testing. A saliva sample was also requested for culture and NAAT testing.

Median age of the MSM recruited was 27 years. Of the 33 who tested positive on the throat culture at baseline, 61% (95% CI: 42-77%) had positive pharyngeal swabs, by culture, by day 7 and 42% (95% CI: 26-61%) had positive swabs by day 14. »