Stem Cells Show Promise for Stroke Recovery

Infusing stem cells into the brain may help boost recovery after a stroke, according to a pilot study published in *Stem Cell Translational Medicine.* The therapy uses CD34+ cells, a set of stem cells in the bone marrow that give rise to blood cells and blood vessel lining cells.

Soma Banerjee, MD, of Imperial College London, and colleagues conducted a study of five patients who recently had a stroke, of whom four had suffered particularly severe strokes resulting in loss of speech and marked paralysis down one side of the body. The investigators took a bone marrow sample from each patient. They isolated the CD34+ cells and then infused them into an artery that supplies the brain. All patients were treated within 7 days of their stroke.

Patients were monitored for 6 months, with the investigators charting their ability to carry out everyday activities independently. Three of the four patients who had experienced a severe stroke were able to walk and look after themselves independently at the end of 6 months. All five were mobile and could take part in everyday tasks.

“This is the first trial to isolate stem cells from human bone marrow and inject them directly into the damaged brain area using keyhole techniques,” study author Paul Bentley, MA, MRCP, PhD, said in a news release. “Our group is currently looking at new brain scanning techniques to monitor the effects of cells once they have been injected.”


PSA Testing Substantially Reduced Prostate Cancer Deaths

A substantial reduction in prostate cancer mortality may be attributed to prostate-specific antigen (PSA) testing, according to long-term results from the European Randomised Study of Screening for Prostate Cancer (ERSPC), published in *The Lancet.*

The ERSPC multicenter, randomized trial with a previously defined centralized database, analysis plan, and core age group (55–69 years) is assessing PSA testing in eight European countries. Eligible men (age, 50–74 years) were identified from population registries and randomly assigned by computer-generated random numbers to screening or no intervention (control). The primary outcome was prostate cancer mortality in the core age group. Analysis was by intention to treat; investigators performed a secondary analysis that corrected for selection bias due to nonparticipation.

With data truncated at 13 years of follow-up, 7,408 prostate cancer cases were diagnosed in the intervention group and 6,107 in the control. The rate ratio of prostate cancer incidence between the intervention and control groups was 1.91 after 9 years, 1.66 after 11 years, and 1.57 after 13 years. The rate ratio of prostate cancer mortality was 0.85 after 9 years, 0.78 after 11 years, and 0.79 at 13 years. The absolute risk reduction of death from prostate cancer at 13 years was 0.11 per 1,000 person-years or 1.28 per 1,000 men randomized, which is equivalent to one prostate cancer death averted per 781 men invited for screening or one per 27 additional prostate cancers detected. After adjustment for nonparticipation, the rate ratio of prostate cancer mortality in men screened was 0.73.


Structured, Moderate-Intensity Physical Activity Reduced Major Mobility Disability in Older Adults

A structured, moderate-intensity physical activity regimen reduced major mobility disability in older adults who were at risk for disability, according to a study published in *JAMA.*

The study found that participants enrolled in a physical activity program had fewer incidents of major mobility disability or persistent mobility disability than participants enrolled in a health education program.

The multicenter, randomized trial enrolled 1,635 sedentary men and women aged 70 to 89 years who participated for an average of 2.6 years. The participants were recruited from urban, suburban, and rural communities at eight centers through the United States. All participants had physical limitations as defined by their score on the Short Physical Performance Battery; patients who scored a 9 or below but were able to walk 400 m were eligible to participate.

Participants were randomized to a structured, moderate-intensity physical activity program (n=818) or a health education program (n=817); the primary outcome was the rate of major mobility disability, which was defined as the inability to complete a 400-m walk test within 15 minutes without sitting or without the use of a walker or another person. Use of a cane was accepted.

Of those enrolled in a physical activity program, 246 (30.1%) had an incident of major mobility disability; of the individuals enrolled in a health education program, 290 (35.5%) had an incident of major mobility disability (hazard ratio [HR], 0.82; 95% CI, 0.69–0.98; \( P=0.3 \)).
Persistent mobility disability occurred in 120 patients (14.7%) in the physical activity group and 162 (19.8%) in the health education group (HR, 0.72; 95% CI, 0.57–0.91; P=.006). In the physical activity and health education groups, 404 (49.4%) and 373 (45.7%) patients, respectively, experienced serious adverse events (risk ratio, 1.08; 95% CI, 0.98–1.20).


Brain Can be Retrained to Prefer Healthy Foods

It may be possible to train the brain to prefer low- over high-calorie foods, a pilot study published in Nutrition & Diabetes suggests.

Thilo Deckersbach, PhD, of Harvard Medical School, Boston, and colleagues conducted a study of 13 overweight or obese individuals randomized to a control group or a novel weight-loss intervention. Functional magnetic resonance imaging was used to measure changes in activation of the striatum for food images at baseline and 6 months.

“Obesity is associated with hyperactivation of the reward system for high- versus low-calorie food cues, which encourages unhealthy food selection and overeating,” the study authors wrote. “However, the extent to which this hyperactivation can be reversed is uncertain and to date there has been no demonstration of changes by behavioral intervention.”

The researchers found that, compared with controls, intervention patients achieved significant weight loss (-6.3 ±1 kg vs 2.1 ±1.1 kg; P<.001) and had increased activation for low-calorie food images with a composition consistent with that recommended in the behavioral intervention at 6 months versus baseline in the right ventral putamen (P=.04) and decreased activation for high-calorie food images of typically consumed foods in the left dorsal putamen (P=.01). There was also a large significant shift in relative activation favoring low- versus high-calorie foods in both regions (P<.04).


—Compiled by Callan Navitsky, Senior Editor