

From the NIH

Drive to lower blood pressure in patients with type 2 diabetes

Physicians are counseled by a National High Blood Pressure Education Program, National Heart, Lung, and Blood Institute advisory to aggressively treat hypertension in patients who have both hypertension and type 2 diabetes because of the higher risk associated with having two independent conditions that are risk factors for cardiovascular disease. The clinical advisory recommends a lower blood pressure goal (135/80 mm Hg) for patients who have both conditions than the goal (140/90 mm Hg) for patients who have only hypertension.

Scientists who initiated the advisory cite studies that show improved results when efforts were made to lower high blood pressure in patients with type 2 diabetes. In one study, the control of hypertension to 144/82 mm Hg led to 44% fewer diabetes-related strokes and 32% fewer diabetes-related deaths.

Buprenorphine more effective with disulfiram for treating cocaine addiction

Results of a study conducted by scientists at the National Institute on Drug Abuse, National Institutes of Health indicate that combining buprenorphine with disulfiram (Antabuse) was more effective than buprenorphine alone in reducing cocaine use in people addicted to both opiates (eg, heroin) and cocaine. It is estimated that at least 50% of individuals addicted to opiates are also addicted to cocaine.

Participants who received a combination of disulfiram and buprenorphine abstained from cocaine for longer periods and achieved abstinence sooner than those who received only buprenorphine. Researchers attribute the increased effec-

tiveness to disulfiram's ability to reduce the pleasurable effects of cocaine, as established in previous studies.

The report can be found in the spring 2000 issue of *Biological Psychiatry*.

Decreasing sodium intake shows significant impact on blood pressure

A National Heart, Lung, and Blood Institute, National Institutes of Health-supported study indicates that reducing dietary sodium reduces blood pressure levels in people with and without hypertension. Further, the blood pressure-lowering effect occurred whether participants followed a diet representative of the fare consumed by the majority of Americans or the DASH diet (Dietary Approaches to Stop Hypertension)—a diet more concentrated in fruits, vegetables, and lower-saturated fats, total fat, and cholesterol—though the latter diet achieved the lowest blood pressure levels. Significantly, the lowest sodium level tested was well below the currently recommended intake of 2400 mg/d.

This study—the DASH-Sodium study—was designed to examine the relationships between blood pressure levels and various sodium intakes during different eating patterns. It involved 412 participants, 57% of whom were women and 57% African Americans, with average systolic blood pressures of 120 mm Hg to 159 mm Hg and diastolic blood pressures of 80 mm Hg to 95 mm Hg. All participants were 22 years of age or older, and 41% had hypertension.

Participants were randomly assigned to one of two dietary plans, each of which was followed at a sodium intake of 3300 mg/d, 2400 mg/d, or 1500 mg/d for 4 weeks. The dietary plans were either the DASH diet or a diet similar to what the majority of Americans consume.

The biggest reductions in blood pressure occurred among those who followed the

DASH diet while maintaining the 1500 mg/d level of sodium intake. In those with hypertension, systolic blood pressure was reduced by an average of 11.5 mm Hg, while in those without hypertension, blood pressure was reduced by an average of 7.1 mm Hg, the combination of sodium reduction and diet producing lower blood pressure levels than either of those elements alone. Additionally, at any of the three levels of sodium intake, blood pressure was lower on the DASH diet. Finally, for the diet representing the usual American fare, reducing sodium levels decreased systolic blood pressure by an average of 3.5 mm Hg, with the greatest reduction occurring when sodium was reduced from 2400 mg/d to 1500 mg/d.

Researchers suggest that by reducing the recommended daily allowance of dietary sodium to 1500 mg/d, those at risk for hypertension can decrease their risk of high blood pressure developing as they age. They also suggest that Americans cut down on processed foods (because of their high sodium levels), read food labels for sodium content, flavor foods with spices rather than salt, and remove salt from the dining table.

The results were presented at the American Society of Hypertension annual meeting.

Antibiotics may cause increased toxins in children with diarrhea

A study partially funded by the National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, shows that antibiotics given to children as treatment for diarrhea caused by *Escherichia coli* 0157:H7 presents a 17% greater chance of their contracting hemolytic uremic syndrome. The results confirm earlier studies that indicated that antibiotics can cause bacteria to release toxins, resulting in kidney and blood disease.

Researchers studied 71 children who had *E. coli* 0157:H7. Of the 9 who received

antibiotics, 5 (56%) contracted hemolytic uremic syndrome, compared with 5 (8%) of the 62 who contracted hemolytic uremic syndrome in the group that did not receive antibiotics.

Victims of hemolytic uremic syndrome are usually children between 1 and 10 years of age. The severe kidney and blood disease causes death in 5% to 10% of its victims and permanent kidney damage in 10% to 40% of survivors.

Tamoxifen shows same benefit for black and white women

Scientists at the National Cancer Institute, National Institutes of Health found that tamoxifen reduces the incidence of contralateral breast cancer in black women as effectively as it does in white women. This was in question because previous studies lacked large enough populations of black women to know if the effect was equal. Additionally, the combined studies show that black women at increased risk for breast cancer can benefit from tamoxifen as a preventive treatment.

The National Surgical Adjuvant Breast and Bowel Project reviewed nine 1980 studies that established tamoxifen as adjuvant treatment for women with breast cancer and as possible preventive treatment. Although individually these studies did not include a large enough population of black women to determine benefit, by pooling all nine of the studies, scientists found that tamoxifen reduced the occurrence of contralateral breast cancer by 43% in black women compared with 39% in white women.

The two main side effects of tamoxifen—endometrial cancer and blood vessel clots—increased about the same in both groups.

Results of the study were presented at the American Society of Clinical Oncology.

From the FDA

FDA approves first of a new class of cancer drugs

The Food and Drug Administration granted accelerated approval for Mylotarg, one of a new type of cancer drugs that affects cancer cells without the punishing side

effects that accompany traditional chemotherapy. Mylotarg, manufactured by Wyeth-Ayerst Laboratories, is used to treat patients with CD33-positive acute myeloid leukemia. It is approved for patients 60 years and older who have relapsed for the first time. Mylotarg induced second remissions in 30% of patients in the clinical study—a rate comparable to results achieved by traditional chemotherapy, but with none of the associated side effects that can damage patients' health further and may be fatal.

The new class of drugs in which Mylotarg is grouped works by linking a cell-killing drug to a synthetic antibody to target proteins on cancerous cells while sparing normal, rapidly dividing cells, thereby reducing side effects associated with chemotherapy. The drug is administered as an infusion in two doses administered 2 weeks apart. Side effects of Mylotarg include liver toxicity.

Three studies of Mylotarg involved 142 patients whose cancer had gone into remission after chemotherapy but who later relapsed. Experts warn that the drug is not a cure for acute myeloid leukemia and that the patient will relapse if additional treatment is not provided.

FDA approves single-bolus thrombolytic for heart attacks

The Food and Drug Administration has approved TNKase (Tenecteplase) for the treatment of acute myocardial infarction. Developed by Genentech, Inc, this single-bolus agent can be administered over 5 seconds in a single dose, offering the most rapid dispensation available.

The Assessment of the Safety and Efficacy of a New Thrombolytic Agent trial compared a weight-adjusted dose of TNKase with the widely used 90-minute accelerated infusion of activase (Ateplase, recombinant).

Mortality rates between the compared substances were TNKase (Tenecteplase), 6.2%; and activase (alteplase, recombinant), 6.2%. The rates for intracranial hemorrhage were TNKase, 0.9%; and activase, 0.9%. The percentages for stroke were TNKase, 1.8%; and activase, 1.7%. The most significant adverse events observed in TNKase trials included intracranial hemorrhage and stroke.

TNKase has unique features that help to prolong its half-life and has been found to result in less disturbance of the body's coagulation system.

TNKase will be provided to the medical community as part of a kit that includes a needleless injection system.

FDA approves abdominal implant for chronic nausea

The FDA approved a device for the treatment of chronic nausea and vomiting that works by sending pulses of electrical energy to the stomach muscle, which then relaxes. The device consists of an implantable pulse generator with stomach leads that are implanted via laparoscopy.

Researchers conducted a trial involving 33 patients randomly assigned to one of two groups—patients with devices in either “on” or “off” mode for the first month and the reverse mode the second month. The average vomiting frequency dropped from 48 episodes at baseline to 23 episodes while the device was on and 29 while the device was off. The average difference from baseline in the patients who remained in the study after 1 year was 77%.

The device was developed by Enterra, Medtronic Corp.

FDA approves Nolvadex for use in women with ductal carcinoma in situ

The US Food and Drug Administration has approved tamoxifen citrate (Nolvadex) to reduce the risk of ductal carcinoma in situ following breast surgery and radiation. Nolvadex is the first medication approved for this type of cancer, which accounts for 20% of all new incidences of breast cancer with mastectomy, lumpectomy, and radiation therapy as common treatment options.

In the 5-year study, 1804 women with ductal carcinoma who had undergone a lumpectomy and radiation therapy were randomly assigned to one of two groups: those taking tamoxifen or those taking placebo. Results indicated that the addition of tamoxifen to other treatment reduced the incidence of breast cancer by 43% compared to the group taking placebo. Survival was similar in the placebo and Nolvadex groups.

Trials also indicated that risk of endome-

trial cancer and blood clots in the lung and legs was increased in groups using Nolvadex compared to placebo in 1% of women. Strokes and cataracts were also found to occur more frequently in the group taking Nolvadex.

From the AHRQ

Higher survival rate if primary angioplasty performed at hospital with more experience

The results of a study funded by the Agency for Healthcare Research and Quality indicate that patients treated for primary angioplasty at hospitals that have increased experience in performing the procedure had a 28% lower mortality rate than patients who had the procedure at hospitals with less experience.

Researchers attribute the cause of the difference in survival rates to increased opportunities at high-volume hospitals to refine related skills as well as methods that allow the procedure to be performed more quickly.

Assessment of clinical strategies in management of atrial fibrillation completed

An assessment of first-line clinical strategies in the management of new-onset atrial fibrillation in patients at outpatient settings has been completed by the Agency for Healthcare Research and Quality. The strategies selected for assessment exclude invasive or emerging modes of therapy.

Calcium channel blockers and β -blockers were found to be more effective than digoxin in controlling high heart rates due to atrial fibrillation. The anticoagulant warfarin, considered by many experts to be most effective, but used reluctantly because of the increased risk of bleeding, was found to decrease risk of stroke by two thirds. Finally, aspirin was found to decrease the risk of stroke by one third.

The Agency chose a core of experts that included representatives from the American Academy of Family Physicians, the American College of Cardiology, and Johns Hopkins University. The experts identified a set of key questions with which they reviewed related literature. ♦

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Editorial comments

Interleukin-12 (IL-12) gene therapy produced an antitumor effect in a murine model of lung cancer when it was combined with chemotherapy or surgery, say researchers from the National Cheng Kung University in Taiwan. The scientists tested the efficacy of recombinant adenoviral vector encoding IL-12 singly, in combination with chemotherapy, and following surgery, for the treatment of lung cancer tumors. The combination of cisplatin and Ad/IL-12 treatment reduced both the incidence and size of tumors, and the antitumor effect was more pronounced when cisplatin was introduced first, followed by the Ad/IL-12 treatment.

Further, the growth of reinoculated tumor cells in the postoperative gene therapy group was suppressed compared with controls. This combination therapy may provide a viable treatment for a condition that has shown poor response to conventional treatments.

This report can be found at www.newsrx.com as *Cancer Gene Therapy Combination Therapy Targets Lung Cancer*.

Results of a study conducted by Johns Hopkins Hospital indicates that older patients with myocardial infarction who receive intravenous thrombolytics are nearly 40% more likely to die within 30 days of treatment than their counterparts not given the medications. Researchers found that younger patients benefit from thrombolytics, but the one third of patients with myocardial infarction who are older than 75 years of age are unlikely to benefit and may be at a higher risk of death.

The general belief that thrombolytics are as helpful for older patients as they are for younger ones is based on research conducted more than a decade ago. Johns Hopkins' researchers attribute the disparity between that research and data used in this study as being due to the differ-

ences in health between patients in general practice and patients enrolled in a study.

The study used data from the Cooperative Cardiovascular Project conducted on patients 65 to 86 years of age with a primary discharge diagnosis of acute myocardial infarction who had clinical and electrocardiographic indications for thrombolytic therapy with no absolute contraindications.

The report can be found in the May 16 issue of *Circulation*.

Researchers conducted trials to measure the effectiveness of three approaches to increasing consumption of folate, a substance known to reduce plasma homocysteine (tHcy). The three approaches were consumption of folic acid-fortified cereals, increased consumption of folate-rich foods, and folic acid supplementation.

Results indicate that the cereal and the supplements were the most effective at lowering homocysteine levels (homocysteine reduced by 21% and 24%, respectively), while the additional consumption of folate-rich foods yielded little reduction.

Scientists conducted the study by adding more folic acid substances to the diets of 65 people between the ages of 36 and 71 years who had above-normal levels of homocysteine.

The report can be found in the June issue of the *American Journal of Clinical Nutrition*.

Weighted exercise may be as effective as estrogen-replacement therapy in helping older women maintain strong bones, say researchers from Oregon State University in Corvallis who conducted the study. Results suggest that lower-body strengthening exercises performed three times a week with the inclusion of slow, controlled