AMERICAN HEALTH CONSULTANTS®

RN® ADVANCED PRACTICE ALERT™

The nurse's guide to superior patient care

American Health Consultants Home Page—http://www.ahcpub.com

DASH Diet of Fruits, Vegetables, Low Fats Reduces Blood Pressure

By Pat McGinley, FNP, MSN

Summary—*Hypertension (HTN) is a common, serious, chronic illness that affects more than 50 million adults in the United States. Morbidity and mortality associated with HTN account for millions of health care dollars and office visits annually. Prevention of hypertension by improving lifestyles is key to reducing these numbers. Researchers compared the effects of three types of diets on blood pressure control in adults.*

Results demonstrated that a diet rich in fruits and vegetables and limited in fats reduced blood pressure. This diet was especially effective in African-Americans, who are known to be at high risk for hypertension. The diet was well-accepted, easy to implement, and reasonable in cost, and it maintained the patient's weight even without a reduction in sodium intake. Early dietary intervention is an effective preventive measure for hypertension.

HYPERTENSION AFFECTS MORE THAN 50 MILLION ADULTS AND IS one of the leading causes of morbidity and mortality in the United States. Its associated morbidity includes stroke, retinopathy, renal dysfunction, heart failure, and coronary heart disease.[1] As we enter the 21st century, hypertension continues to represent a major challenge for health care providers, government health agencies, and the population at large, not only in control and treatment but in prevention as well.

The Dietary Approaches to Stop Hypertension (DASH) clinical trials in 1997 demonstrated that a daily diet of 8-10 fruits and vegetables, 2-3 servings of low-fat dairy, and decreased saturated and total fats significantly reduced blood pressure.[2] *(See patient education handouts on the DASH diet and sensible use of salt, enclosed in this issue.)*

A more recent multicenter study expanded on those results to determine what the dietary effects would show on three subgroups of patients. Results indicated the DASH combination diet significantly lowered blood pressure in all of the subgroups participating in the study but was most effective in African-Americans and hypertensive individuals.[3]

Volume 2 • Number 8 • August 1999 • Pages 57-64

INSIDE

Study Design

The randomized controlled feeding study was conducted at four academic medical centers throughout the United States over an eight-week period. The purpose of the study was to compare the effects of three dietary intake patterns on blood pressure in people with stage 1 hypertension (140-159/90-99) and those with high normal blood pressure. The three dietary patterns were:

Diet 1.

A control diet was typical of American intake patterns, with about 2100 calories composed of 37% fats; 15% protein with 2.5 servings meat, fish, or fowl; 300 mg cholesterol; 3000 mg sodium; 9 g fiber; 2-3 fruits/vegetables; and a half serving of low-fat or regular-fat dairy. (N= 154)

Diet 2.

Diet 2 was a fruit and vegetable diet consisting of intake high in fruits and vegetables but no limits on other nutrients, with about 2100 calories composed of 37% fat; 15% protein with 2.5 servings meat, fish, or fowl; 300 mg cholesterol; 3000 mg sodium; 31 g fiber; 5-8 fruits/vegetables; and a half serving regular-fat dairy. (N=154)

Diet 3.

Diet 3 is a combination diet consisting of 8-10 fruits and vegetables; low-fat dairy foods; only modest intake of protein, low saturated fats, total fats, and cholesterol, with about 2100 calories composed of 27% fat; 18% protein with 1.6 servings meat, fish, or fowl; 150 mg cholesterol; 3,000 mg sodium; 31 g fiber, nine fruits/vegetables; two servings of low-fat dairy; and a half serving regular-fat dairy. (N=151)

The study cohort was obtained through mass mailings, public service announcements, and advertisements. Participants were paid $150-$600 for completion of the study. The study was designed to include two-thirds minority participants, especially African Americans because they are at higher risk for hypertension as well as increased morbidity.

Participation criteria for the study included:

- subjects ages 22 or older;
- and average untreated blood pressure taken in sitting position on three screening visits of < 160/80-95 mm/Hg.

Exclusion criteria included:

- presence of diabetes, hyperlipidemia, coronary heart disease, renal insufficiency, pregnancy, or other chronic medical problems that would interfere with participation;
- body mass index (BMI) > 35 (weight in kilograms divided by the square of height in meters);
- use of medications that affect blood pressure;
- alcoholic beverage intake of > 14 drinks per week;
- and unwillingness to discontinue use of antacids or vitamin and mineral supplements that contain magnesium or calcium.

The study cohort consisted of 459 participants:

- 60% African-American;
- 34% non-Hispanic white;
- and 6% other minorities.

Women constituted 49% of the subjects, of whom 33% were white and 59% African-American. More than half of the study participants were classified as obese, with women and African-Americans having higher rates of obesity than men and whites. The mean physical activity level was classified as sedentary.

Pre-participation diet analyses revealed daily fat intake was 39% in African-Americans and 38% in whites. African-Americans consumed 5.4 servings of fruits/vegetables while whites consumed 6.1 servings. Trained staff measured two blood pressures using random-zero sphygmomanometers after the subject rested quietly for five minutes in a sitting position.

The average of three screening and four initial phase pairs of blood pressure measurements defined baseline blood pressures. The average of four or five pairs of blood pressure measurements defined follow-up blood pressures, which were taken during the last 1-2 weeks of the intervention phase.

RN Advanced Practice Alert, ISSN 1520-8451, is published monthly by *RN Magazine* and American Health Consultants, 3525 Piedmont Road NE, Bldg. 6, Suite 400, Atlanta, GA 30305.
GROUP PUBLISHER: Brenda Mooney
MANAGING EDITOR: Joy Daughtery Dickinson
PRODUCTION EDITOR: Terri McIntosh
GST Registration No.: R128870672
POSTMASTER: Send address changes to ***RN Advanced Practice Alert***, P.O. Box 740059, Atlanta, GA 30374.

Subscriber Information

Customer Service: (800) 688-2421. 8:30 a.m.-6 p.m. Monday-Thursday, 8:30 a.m.-4:30 p.m. Friday, EST.
Customer Service E-Mail Address:
customerservice@ahcpub.com
Editorial E-Mail Address:
joy.daughtery@medec.com
World-Wide Web: http://www.ahcpub.com

Subscription Prices

United States: $189 per year.
Outside the United States: $219 per year.
Canadian residents add 7% sales tax.
Back Issues: $32 per issue. Missing issues will be fulfilled by Customer Service free of charge when contacted within one month of the missing issue's date.

Accreditation

This continuing education offering is sponsored by American Health Consultants®, which is accredited as a provider of continuing education in nursing by the American Nurses Credentialing Center's Commission on Accreditation. In addition, American Health Consultants® is an approved provider by the California Board of Registered Nursing for approximately 10 contact hours (provider #CEP10864).

Questions & Comments

Please call **Joy Daughtery Dickinson,** Managing Editor, at (912) 377-8044.

Study Methodology

The study was conducted in two parts. During the initial (run-in) phase, participants ate a controlled diet over a three-week period. If they successfully adhered to the diet during this period, they were randomized into one of the three treatment diet categories. Once randomized, participants were fed at each of the four clinical centers over an eight-week period (the intervention phase).

One meal a day (either lunch or dinner) was consumed at a clinical center. The remaining meals were distributed as a "takeout" to be consumed off site for the rest of the 24-hour period. Weekend meals were given out on Fridays and consumed off site. Caffeinated beverages were limited to ≤ 3 per day. Alcoholic beverages were limited to ≤ 30 g per day. Participants were instructed to eat all and only the study foods. Each person kept a daily diary of any nonstudy foods consumed as well any required study foods that were not eaten.

Study Results

Researchers initially analyzed the data according to the diet followed throughout the study. Further analysis measured:

- differences among the races;
- hypertension status;
- sex;
- BMI;
- education;
- annual income;
- physical activity level;
- alcohol intake;
- and family history.

The study was completed by 446 subjects. The most significant results were that the combination diet lowered blood pressure in all subgroups. This diet was particularly effective in decreasing blood pressures in African-Americans and those with hypertension. Only those with little education or those who consumed alcohol saw no change in blood pressure. The DASH combination diet was successful in lowering systolic and diastolic blood pressure. The DASH diet reduced blood pressure in African-Americans with hypertension by 13.2/6.[1] mm/Hg. Among normotensive African-Americans on the DASH diet, blood pressure was reduced by 4.3/2.6 mm/Hg. Among hypertensive whites, the DASH diet reduced blood pressure by 6.3/4.4 mm/Hg and 2/1.2 mm/Hg in normotensive subjects. The combination diet also resulted in reduction of blood pressure that was less than that which resulted from the DASH diet but greater than that from the control diet. The blood pressure reduction of 7.1/2.8 mm/Hg was significant only in the subjects who had existing hypertension.

Clinical Implications

This study has tremendous potential not only for treating patients with existing hypertension but for normotensive individuals who are at risk for developing hypertension. The study results indicate that early dietary intervention using the DASH diet can prevent or delay the onset of hypertension. For hypertensive patients, initiation of diet therapy is a vital component of the medical management plan and may be successful enough to delay initiation of drug therapy. When the patient history reveals risk factors for hypertension in a normotensive patient, education should begin at once.

Current national guidelines for hypertension management recommend reduced sodium intake, weight reduction in the overweight, and moderation of alcohol intake.[4] Patients with high-normal blood pressure need to know they are at increased risk of blood pressure-related morbidity and mortality even though they do not have clinical hypertension.

The DASH diet is healthful, reasonably priced, low-risk, easy to implement, and consistent with current recommendations for reduction of heart disease, cancer, and osteoporosis. The DASH combination diet lowered blood pressure without reducing weight and sodium intake. A study to determine the effect of reducing sodium intake in combination with the DASH diet is under way. The combination of all three — the DASH diet, weight reduction, and sodium reduction — should be the first step in hypertension control. Clinicians who practice early intervention for their patients, especially among African Americans, can reduce morbidity and mortality associated with hypertension. ❖

References

1. The sixth report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Arch Int Med* 1997;157:2413-2446.
2. Appel LJ, Moore TJ, Obarzanek E, et al. A clinical trial of the effects of dietary patterns on blood pressure. *N Engl J Med* 1997;336:1117-1124.
3. Svetkey L, Simons-Morton D, Vollmer W, et al. Effects of dietary patterns on blood pressure. Subgroup analysis of the Dietary Approaches to Stop Hypertension (DASH) randomized clinical trial. *Arch Int Med* 1999;159:285-293.
4. National High Blood Pressure Education Program. Working Group Report on Primary Prevention of Hypertension. NIH Publication 93-2669. Washington, DC: National Heart, Lung, and Blood Institute; 1993.

Ultrasound Effective for Calcific Tendinitis of Shoulder

By Sally Beattie, MS, RN, CS, GNP

Summary—*Painful calcification in shoulder tendons has traditionally been managed by the administration of anti-inflammatory agents and rest, followed as needed by range-of-motion exercise to maintain joint function. Empirical observations suggest that ultrasound therapy may provide another option for this disorder. To confirm its efficacy, researchers in Vienna conducted a randomized, double-blind comparison of ultrasonography and sham sound-wave application in patients with symptomatic calcific tendinitis verified by radiography.*[1]

At the end of six weeks of ultrasound treatment, calcifications in 47% of the treated shoulders were improved or resolved as compared with only 10% improvement and 0% resolution in shoulders given the sham treatment. The nine-month follow-up revealed 65% of the ultrasound-treated shoulders improved, while only 20% of the sham treated subjects reported improvement or resolution.

However, the increase in improvement between the six-week and nine-month follow-up was not statistically significant. The study suggests ultrasound therapy provides short-term clinical improvement, but further investigation is needed before it becomes widely used in this clinical setting.

PAINFUL AND DEBILITATING, CALCIFIC TENDINITIS OF the shoulder is a self-limiting reactive calcification of the rotator-cuff tendons. It commonly affects individuals between 30 and 60 years of age, women slightly more than men, and workers in sedentary jobs more often than those who perform manual work. Current treatments aimed at removal of these deposits such as surgery and percutaneous needle aspiration reduce pain and restore shoulder function in some, but not all, patients.[2]

Empirical observations following the use of shock-wave therapy for similar types of musculoskeletal disorders show promising results. However, the clinical efficacy of ultrasound therapy for treating calcific tendinitis of the shoulder has not been confirmed.

To address this issue, researchers in Vienna conducted a randomized double-blind comparison of ultrasound and indistinguishable sham insonation in patients who had symptomatic calcific tendinitis verified by radiography.[1]

Study Methodology

Patients with a radiographically established diagnosis of calcific tendinitis were invited to participate in a randomized, double-blind comparison of ultrasound and sham insonation. Inclusion criteria included:

- idiopathic calcific tendinitis type 1 (appearing circumscribed and dense on radiography;
- or type 2 (dense or circumscribed appearance);
- diameter of calcification exceeding 5.0 mm;
- mild-to-moderate pain present for more than four weeks;
- or restricted range of motion of affected shoulder or shoulders.

Patients with type 3 calcific tendinitis (translucent or cloudy appearance without clear circumscription) were excluded because that type often resolves spontaneously.

Additional exclusion criteria were:

- a systemic disease such as gout, some rheumatic diseases, or hypercalcemia, which are associated with an increased risk of calcification;
- previous surgery, percutaneous needle aspiration, ultrasound, or shock-wave therapy;
- injection of glucocorticoids in the shoulder within three months preceding the study;
- or regularly used analgesic or anti-inflammatory drugs for the relief of pain.

Investigators recruited 63 patients with 70 involved shoulders; 54 subjects (61 involved shoulders) completed the study.

Randomization to ultrasound (n=32) or sham (n=29) treatment was conducted according to shoulders rather than patients. A therapist not involved in treatment handed out the assignments in sealed envelopes and also switched the ultrasonic generator to active or sham mode. Neither patient nor therapist actually applying the treatment was aware of the treatment assignment.

Subjects received 24 treatments administered for 15 minutes per session at a frequency of 0.89 MHz using an intensity of 2.5 W per square centimeter, to the area over the calcification. The first 15 treatments were given daily (five times per week) for three weeks, and the remaining nine were given three times a week for three weeks. Patients could take an analgesic drug for occasional pain relief, but nonsteroidal or steroidal anti-inflammatory preparations were not allowed.

The primary outcome measure was change from baseline in the calcium deposits shown on radiography. X-rays were assessed independently by two radiologists not involved in the study. Secondary outcomes included changes from baseline in subjective and objective measures of pain and function assessed using the 100-point Constant Score[3] and the pain score developed by

Binder.[4] The Constant Score provides an overall assessment of the shoulder with respect to degree of pain, ability to perform normal tasks of daily living, and the active range of motion and power of the shoulder. The pain score developed by Binder focuses exclusively on subjective symptoms including pain, pain on resisted movement, and pain on active abduction. Radiography and clinical examinations were performed immediately before the first and after the last treatment session and nine months following baseline evaluation.

Study Results

After six weeks of treatment, calcium deposits had resolved in 19% (six shoulders) of the ultrasound treatment group and had decreased by at least 50% in 28% (nine shoulders), compared with respective values of zero and 10% (three shoulders) in the sham treatment group (P=0.003). At nine months follow-up, deposits had resolved in 42% (13 shoulders) and improved in 23% (seven shoulders) of the ultrasound treatment group, compared with 8% (two shoulders) and 12% (three shoulders), respectively, in the sham group.

At the end of therapy, the ultrasound group had significantly greater decreases in pain and function. Although further improvements were noted in both groups, the differences were no longer significant at nine months. These results confirmed preliminary data[5] supporting the association between ultrasound therapy for resolving calcifications and providing short-term clinical improvements for patients with symptomatic calcific tendinitis of the shoulder. There were no reported adverse effects associated with this study; however, a few patients with calcific tendinitis and minimal shoulder pain experienced a transient increase in shoulder pain shortly after the onset of ultrasound treatment.[1]

Implications for Practice

Calcification of the shoulder tendons initially may be asymptomatic or associated with varying degrees of pain at rest or with movement, especially abduction. A "catching" sensation with movement may be experienced, as well as nocturnal discomfort. As the condition progresses, patients may complain of constant severe pain and restriction of movement that typically lasts about two weeks and may be accompanied by fever and malaise. An elevated erythrocyte sedimentation rate and neutrophilia may be present. Differential diagnosis includes joint sepsis and gout. The pain and some restriction of movement may last several months.

The current standard treatment for calcific tendinitis is administration of nonsteroidal anti-inflammatory drugs.[1] A single subacromial injection of a local anesthetic sometimes provides temporary relief. During the acute phase, patients may need to rest the affected arm in a sling.[2] Once pain is controlled, function may be maintained through exercises to extend the range of motion and strengthen the rotator cuff.[2] Extracorporeal shockwave therapy may be effective in reducing calcification and stimulating healing of soft tissue.[2] Clinicians need to be aware that a potential side effect of high-intensity ultrasound is local tissue damage if the heat is excessive.

This study did not compare these therapies with the use of ultrasound in clinical or economic terms. Nor did it establish characteristics of patients who are likely to have a positive response. Thus, its potential benefit remains unknown. Until these issues are clarified, routine use of ultrasound for calcific tendinitis of the shoulder is not recommended but should be reserved for patients with severe symptoms and used with other treatments.[2] ❖

References

1. Ebenbichler GR, Erdogmus CB, Resch KL, et al. Ultrasound therapy for calcific tendinitis of the shoulder. *N Engl J Med* 1999;340:1533-1538.
2. Speed CA, Hazleman BL. Calcific tendinitis of the shoulder (editorial). *N Engl J Med* 1999;340:1582-1584.
3. Constant CR, Murley AH. A clinical method of functional assessment of the shoulder. *Clin Orthop* 1987;214:160-164.
4. Binder A, Parr G, Hazleman B, et al. Pulsed electromagnetic field therapy of persistent rotator cuff tendinitis: a double-blind controlled assessment. *Lancet* 1984;1:695-698.
5. Ebenbichler GR, Resch KL, Graninger WB. Resolution of calcium deposits after therapeutic ultrasound of the shoulder. *J Rheumatol* 1997;24:235-236.

Tests Indicate Corticosteroid Regimen for PMR Patients

By Barbara Biedrzycki, RN, MSN, AOCN, CRNP

Summary—*Polymylagia rheumatica (PMR) is known for its increased erythrocyte sedimentation rate (ESR), elevated interleukin 6 (IL-6) levels, and dramatic improvement, usually within 72 hours, following a low to moderate dose of corticosteroid. Researchers set out to explore clinical and laboratory data to determine optimal parameters for the dosing and duration of corticosteroid therapy, as there are no current standard practice guidelines for this treatment of choice. Analysis of data*

revealed three distinct subsets of PMR patients for whom diagnostic variables may predict optimal therapy[1] and assist clinicians in determining the most appropriate medication dosage and schedule.

PMR IS AN INFLAMMATORY CONDITION FEATURING morning stiffness and pain mainly in the shoulder and pelvic girdle area, fever, malaise, and weight loss. It usually presents with a markedly increased ESR, anemia, and elevated interleukin 6 (IL-6) levels. Although muscle weakness is not associated with PMR, people with this illness typically have trouble brushing their hair, getting out of a chair, and getting dressed.[1,2]

Giant-cell arteritis (GCA), which some believe is associated with PMR as another aspect of a single disease, causes a systemic panarteritis affecting medium and large vessels. Its classic symptoms are headache, scalp tenderness, visual symptoms, jaw claudication, and throat pain.

Similarities between PMR and GCA are:

- The conditions often coexist; about 50% of patients have both.
- Both usually affect those over age 50.
- Both show similar patterns of cytokines in the blood and arteries.
- Both show the same HLA haplotypes.

Differences between PMR and GCA are:

- PMR responds to low-dose corticosteroid therapy, usually 10-20 mg/d, whereas GCA requires a higher dose, usually 40-60 mg/d.
- GCA causes blindness; PMR does not.[2]

Dramatic improvement, usually within 72 hours, with a low to moderate dose of corticosteroid is considered a possible diagnostic criterion for PMR. Because there are no standard guidelines for the optimal dose or duration of corticosteroid therapy for PMR, researchers explored clinical and laboratory data to determine if parameters could be identified to divide patients into treatment groups with different corticosteroid requirements.[1]

Study Methodology

Researchers prospectively studied 30 patients diagnosed with PMR who received a specific corticosteroid regimen. Inclusion parameters based on diagnostic criteria of PMR were:

- ESR $\geq$ 40 mm/h (if diagnosis was independently confirmed by second rheumatologist, exceptions were made to the ESR criterion);
- morning stiffness $\geq$ 30 minutes;
- and pain in neck/arms, hips/thighs, neck/torso $\geq$ one month.

The exclusion parameter was histological evidence of GCA. A temporal artery biopsy was performed on those who presented with headache, jaw claudication, scalp tenderness, or abnormal temporal arteries.[1]

The corticosteroid treatment plan consisted of initial treatment with 20 mg of prednisone every morning. If the patient responded positively, the prednisone was decreased by 2.5 mg every two weeks. If there was no response, prednisone was increased by 10 mg/d before tapering. If the patient experienced a return of active

Table

Major Characteristics of Study Subjects

Subset A, n=8 (30%)

- Short term disease
- Rapid response to initial prednisone 20 mg/d
- Treatment tapered without relapses
- Treatment time < 1 year
- Long-term remission
- Initial erythrocyte sedimentation rate (ESR) < 50 mm/h
- Initial and four weeks after therapy IL-6 < 10 pg/ml
- Median pain score 6.7 (scale 0-10)*

Subset B, n=12 (44%)

- Relapsing disease
- Initial response to prednisone 20 mg/d
- Relapse with pain and stiffness on tapering of prednisone to < 7.5 mg/d
- Treatment time > 1 year
- Initial ESR > 50 mm/h
- Initial IL-6 > 10 pg/ml, decreased after one month of therapy IL-6 <10 pg/ml
- Median pain score 7.1

Subset C, n=7 (26%)

- Resistant disease
- Partial response to prednisone 20 mg/d
- Increased prednisone dose to 30 mg/d or 20 mg/d > 4 weeks
- Treatment > 1 year
- Initial ESR > 50 mm/h
- Initial and four weeks after therapy IL-6 > 10 pg/ml
- Median pain score 8.4*
- Two patients (29%) developed giant cell arteritis

* Differences statistically significant at P=0.5 level.

Source: Weyland CM, Fulbright JW, Evans JM, et al. Corticosteroid requirements in polymyalgia rheumatica. *Arch Intern Med* 1999;159:577-584.

disease after tapering, the prednisone dose was increased by 5 mg/d. After the third flare-up of active disease, the patient was prescribed prednisone at the discretion of the physician. Patients were followed for six months after completion of corticosteroid therapy to assess for disease relapse.[1]

Study Results

Although 30 patients initially met the diagnostic criteria for inclusion in this study, the final study cohort was 27 because the diagnoses changed for three subjects before the study ended. One person was diagnosed with bladder cancer, and two were diagnosed with rheumatoid arthritis. Analyzing the clinical and laboratory data led researchers to categorize patients with PMR into three distinct subsets. *(See table, Major Characteristics of Study Subsets, p. 62.)* Comparisons were made initially and at four-week periods of therapy, using a rank sum test for pain scores, ESR, and plasma IL-6 levels.[1]

Results showed the length of therapy required varied greatly among groups. Four patients completely discontinued corticosteroid therapy after 18 weeks without any relapse. However, 50% of the entire cohort was still receiving corticosteroid therapy after 15 months. One patient continued to require corticosteroid therapy for more than two years.[1]

Researchers determined that the patients who may benefit most from a short course (less than a year) of low-dose prednisone are those with an initial ESR < 50 mm/h and the IL-6 < 10 pg/ml and who respond promptly without relapses, based on subset A's profile.

When the initial ESR is > 50 mm/h and the IL-6 > 10 pg/ml, a more challenging disease condition is indicated and the patient may relapse as the prednisone is tapered. In this case, the disease is classified as relapsing (subset B). If the patient does not respond at all to the initial dose of 20 mg/d prednisone, the illness is classified as resistant (subset C). A decrease in IL-6 to less than 10 pg/mg after one month of therapy indicates that the disease will not be resistant to corticosteroid therapy, and a careful titration of the corticosteroid is indicated to prevent relapses.

If the disease is classified as relapsing or resistant, investigators conclude that corticosteroid therapy will be needed most likely for more than a year.

Implications for Practice

This study provides useful information to help clinicians diagnose, treat, and educate patients with PMR. As PMR and GCA may be different presentations of the same disease, advanced practice nurses need to be alert to signs and symptoms of both. Headache, scalp tenderness, visual changes, jaw claudication, throat pain, and tender temporal arteries may indicate the need for a temporal artery biopsy to diagnose GCA.

In addition to the risk for blindness, people with GCA are susceptible to other vascular complications, such as aortic aneurysms.[2] Although 28% of subset C subjects developed GCA, the study cohort was too small to state that there is an overall risk for this subgroup to progress to GCA.[1]

An important consideration in the management of patients with PMR, is the risk for many other health problems that accompany prolonged therapy with corticosteroids. Especially in the population over age 50, where PMR is most prevalent, there is an increased risk of hypertension and osteoporosis.[3]

There is still much to be learned about PMR, including its pathogenesis and the molecular basis of corticosteroids' therapeutic action on this disease. Exploring PMR's relationship to GCA and other rheumatic diseases through clinical and pathogenic research will lead to a better understanding of the disease and its optimal treatment. ❖

References

1. Weyland CM, Fulbright JW, Evans JM, et al. Corticosteroid requirements in polymyalgia rheumatica. *Arch Intern Med* 1999;159:577-584.
2. Hellmann DB, Stone JH. Arthritis and Musculoskeletal Disorders. In: Tierney LM, McPhee SJ, Papadakis MA, eds. *Current Medical Diagnosis and Treatment 1999.* Stanford, CT: Appleton and Lange; 1999:786-837.
3. Spratto GR, Woods AL. *PDR Nurse's Handbook.* Montvale, NJ: Medical Economics Co. 1999:110-118.

Dopamine Agonists Calm Restless Legs

By Joan Unger, RN, MS, ARNP-C

TWO RECENTLY PUBLISHED RANDOMIZED, DOUBLE-blind, placebo-controlled, crossover studies reported that patients suffering restless legs syndrome (RLS) obtained objective and subjective relief from dopamine agonists.

The first study, by Canadian researchers, involved 10 patients who were evaluated for sensory and motor manifestations before and after two one-month periods of treatment. Subjects completed one week of home questionnaires followed by two nights of recordings in a sleep laboratory. Subjects received an initial dose of 0.375 mg/day of pramipexole which, if tolerated, was increased to 0.75 mg/day after the first week and to 1.5 mg/day after the second week.

Investigators reported that pramipexole reduced the periodic leg movements during sleep to normal values and also significantly reduced the values during wakefulness. Patient questionnaires reported that the drug reduced leg discomfort at bedtime and during the night. Study authors stated, "Pramipexole is the most potent therapeutic agent ever tested for RLS."[1]

German investigators conducted a similar study using the long-acting D1 and D2 dopamine agonist, pergolide. Thirty patients, free of psychoactive drugs for at least two weeks prior to the study, were monitored using sleep diaries, polysomnography, and clinical ratings for four weeks. Patients took pergolide 0.05 mg at bedtime and increased the dosage by 0.05 mg each day as needed to a maximum of 0.75 mg/day. All patients also received domperidone TID.

Researchers found that at a mean dose of 0.51 mg as a single daily dose two hours before sleep, subjects had fewer periodic leg movements per hour of time in bed (5.7 vs. 54.9, $p < 0.0001$) and total sleep time was significantly lengthened (373 vs. 261 minutes, $p < 0.0001$). Subject ratings of sleep quality, quality of life, and severity of RLS improved significantly without relevant adverse events. Study authors conclude that pergolide in combination with domperidone as a single low-to-medium bedtime dose was well-tolerated and effective in treating sensorimotor symptoms and sleep disturbance in patients with RLS.[2] ❖

References

1. Montplaisir J, Nicolas A, Denesle R, et al. Restless legs syndrome improved by pramipexole: a double-blind randomized trial. *Neurology* 1999;23:938-943.
2. Wetter TC, Stiasny K, Winkelmann J, et al. A randomized controlled study of pergolide in patients with restless legs syndrome. *Neurology* 1999;23:944-950.

Predicting the Etiology of Dizziness in the Elderly

A PROSPECTIVE CASE-CONTROLLED STUDY INVOLVING 50 patients over the age of 60 who presented with dizziness and 22 case controls matched in age and sex was conducted to identify the clinical characteristics that might indicate the most likely basis for dizziness. Patients were interviewed about their symptoms, and all received neurologic, cardiovascular, and otolaryngologic examinations.

Researchers found that symptoms were of long duration, a median of one year, and 46% of subjects reported syncope and/or falls in addition to dizziness.

3 sources of dizziness

They attributed dizziness to three sources:

- cardiovascular diagnosis in 14 patients (28%);
- peripheral vestibular disorder in nine patients (18%);
- and central neurological disorder in seven patients (14%).

In nine patients (18%), two or more diagnoses were found, and in 11 (22%), no attributable cause could be identified.

Researchers found dizziness significantly more likely to be of cardiovascular origin when accompanied by syncope, lightheadedness, pallor, a coexisting cardiovascular disease, or triggered by prolonged standing. Dizziness described as vertigo predicted a peripheral vestibular origin.

Study authors concluded that "clinical characteristics can predict an attributable cause of dizziness in most older patients and thus guide general practitioners in treatment and appropriate specialist referral." — JAU ❖

Source

Lawson J, Fitzgerald J, Birchall J, et al. Diagnosis of geriatric patients with severe dizziness. *J Am Geriatr Soc* 1999;47:113-114.