

Septic Arthritis Risk Raised With Anti-TNF Use

BY DENISE NAPOLI

PHILADELPHIA — Septic arthritis was twice as likely to occur in patients taking anti-tumor necrosis factor drugs for rheumatoid arthritis as in patients with the disease who did not take anti-TNFs.

However, the results may not be fully translatable to a U.S. population of RA patients, according to Dr. Deborah P. Symmons, who presented the findings during

a press briefing at the annual meeting of the American College of Rheumatology.

In the United Kingdom, she explained, patients must have failed two disease-modifying antirheumatic drugs and have a high disease activity score in order to be eligible for treatment with TNF blockers. “Those people may have more serious disease” than do patients who take these agents in the United States, said Dr. Symmons, professor of rheumatology

and musculoskeletal epidemiology at the University of Manchester (England).

Dr. Symmons and her associates studied the records of 11,757 RA patients from the British Society for Rheumatology Biologics Register who received anti-TNF drugs from October 2001 through May 2008. Patients were followed for 6 months or until death. Septic arthritis was counted in all patients who received that diagnosis either while taking anti-TNFs

or within 90 days of their last dose.

A comparison group of 3,515 patients with active RA who were taking only DMARDs was also followed.

According to Dr. Symmons, 179 cases of septic arthritis that met study criteria occurred during the study period, for an incident rate of 1 per 200 patients (5 cases per 1,000 patient-years). In contrast, among the DMARD-only control group, there were

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there were 17 cases of septic arthritis, for an incidence of 1.9 cases per 1,000 patient-years.

That amounted to a hazard ratio for contracting septic arthritis of 2.0 for the anti-TNF patients, compared with controls (95% confidence interval, 1.1-3.5) after adjustment for age, sex, disease severity, prior joint replacement, comorbidity, and steroid use.

The investigators reported that 51% of septic arthritis cases occurred in patients' "native" joints (that is, not prosthetic joints), which are generally considered to have a higher risk of septic

arthritis. However, "in both groups, having a replaced joint increased the pa-



Compared with controls, patients on anti-TNF agents had a 2.0 hazard ratio for contracting septic arthritis.

DR. SYMMONS

tient's risk for an infection, but that risk was not further increased by use of an

anti-TNF drug," Dr. Symmons said.

The risk was highest with the use of etanercept, compared with infliximab and adalimumab.

Staphylococcus bacteria caused half of the infections in the DMARD group and 75% of infections in the anti-TNF group.

Dr. Symmons, along with one other researcher on the study, reported affiliation with the British Society for Rheumatology, on whose registry data the study was based. The researchers wrote that they had no other conflicts to disclose. ■

Anti-TNF Drugs Tied to Skin Cancer

BY DENISE NAPOLI

PHILADELPHIA — Two studies showed an increased risk for non-melanoma skin cancer in rheumatoid arthritis patients who take anti-tumor necrosis factor therapies, and should prompt evaluation of the use of these drugs in patients at risk for skin cancer, according to the researchers.

Previous studies have been too small to show a definitive link between biologic therapy for RA and skin malignancy, although RA previously has been well established as a risk factor for skin cancer, Dr. Prabha Ranganathan said.

She presented the results of her retrospective cohort study of RA patients in the Department of Veterans Affairs national database at the annual meeting of the American College of Rheumatology.

Among 16,829 patients with RA, 3,096 were treated with anti-TNF drugs at VA medical centers between Oct. 1, 1998, and Sept. 30, 2006. The incidence of non-melanoma skin cancer was 25.9 per 1,000 patient-years in this cohort, compared with 19.6 per 1,000 patient-years in the biologic-naive cohort, a 34% increased risk.

The incidence of melanoma also was increased by about 50%, with about 3.7 cases per 1,000 patient-years seen in the anti-TNF-treated group vs. 2.6 cases per 1,000 patient-years in the biologic-naive cohort. Both results were significant.

A second study presented at the press conference mirrored these findings. Dr. Kimme Hyrich of the University of Manchester (England) looked at RA patients from the British Society for Rheumatology's biologics register, a prospective cohort study begun in 2001 to monitor the long-term safety of anti-TNF agents.

Dr. Hyrich found that among 11,598 RA patients who were treated with anti-TNF drugs and had no prior non-melanoma skin cancer, the incidence of a malignancy was 3.5 per 1,000 patient-years. In contrast, among 8,975 similar patients who were treated with nonbiologic therapies, the incidence of new nonmelanoma skin cancers was 2.4, for a 70% increased risk for the anti-TNF-treated patients, although the data were not significant, Dr. Hyrich reported. Dr. Hyrich pointed out that patients treated with anti-TNF drugs typically have more contact with their physicians, which could have introduced a surveillance bias.

Dr. Ranganathan cautioned that even for patients who have multiple skin cancer risks, anti-TNF agents are still a good choice for patients who have failed other treatments.

"People with risk factors should be watched more closely and maybe have periodic skin exams," she said, adding, "I don't think [having risk factors] would be an absolute contraindication."

Dr. Ranganathan, Dr. Hyrich, and their respective research teams did not have any financial disclosures. ■

The incidence of adverse events was not dose-related and did not correlate with gender, age, or race of patients.

The incidence of cough occurring with telmisartan in 6 placebo-controlled trials was identical to that noted for placebo-treated patients (1.6%).

In addition to those listed above, adverse events that occurred in >0.3% of 3500 patients treated with telmisartan monotherapy in controlled or open trials are listed below. It cannot be determined whether these events were causally related to telmisartan tablets: **Autonomic Nervous System:** impotence, increased sweating, flushing; **Body as a Whole:** allergy, fever, leg pain, malaise; **Cardiovascular:** palpitation, dependent edema, angina pectoris, tachycardia, leg edema, abnormal ECG; **CNS:** insomnia, somnolence, migraine, vertigo, paresthesia, involuntary muscle contractions, hypoesthesia; **Gastrointestinal:** flatulence, constipation, gastritis, vomiting, dry mouth, hemorrhoids, gastroenteritis, enteritis, gastroesophageal reflux, toothache, non-specific gastrointestinal disorders; **Metabolic:** gout, hypercholesterolemia, diabetes mellitus; **Musculoskeletal:** arthritis, arthralgia, leg cramps; **Psychiatric:** anxiety, depression, nervousness; **Resistance Mechanism:** infection, fungal infection, abscess, otitis media; **Respiratory:** asthma, bronchitis, rhinitis, dyspnea, epistaxis; **Skin:** dermatitis, rash, eczema, pruritus; **Urinary:** micturition frequency, cystitis; **Vascular:** cerebrovascular disorder; and **Special Senses:** abnormal vision, conjunctivitis, tinnitus, earache.

During initial clinical studies, a single case of angioedema was reported (among a total of 3781 patients treated).

Clinical Laboratory Findings

In placebo-controlled clinical trials, clinically relevant changes in standard laboratory test parameters were rarely associated with administration of telmisartan tablets.

Hemoglobin: A greater than 2 g/dL decrease in hemoglobin was observed in 0.8% telmisartan patients compared with 0.3% placebo patients. No patients discontinued therapy due to anemia.

Creatinine: A 0.5 mg/dL rise or greater in creatinine was observed in 0.4% telmisartan patients compared with 0.3% placebo patients. One telmisartan-treated patient discontinued therapy due to increases in creatinine and blood urea nitrogen.

Liver Enzymes: Occasional elevations of liver chemistries occurred in patients treated with telmisartan; all marked elevations occurred at a higher frequency with placebo. No telmisartan-treated patients discontinued therapy due to abnormal hepatic function.

Cardiovascular Risk Reduction Trials

In clinical studies with patients at high risk of developing major cardiovascular events, cases of sepsis, including some with fatal outcomes, have been reported.

Amlodipine

Amlodipine has been evaluated for safety in more than 11,000 patients in U.S. and foreign clinical trials. Most adverse reactions reported during therapy with amlodipine were of mild or moderate severity. In controlled clinical trials directly comparing amlodipine (n=1730) in doses up to 10 mg to placebo (n=1250), discontinuation of amlodipine due to adverse reactions was required in only about 1.5% of amlodipine-treated patients and was not significantly different from that seen in placebo-treated patients (about 1%). The most common side effects were headache and edema. The incidence (%) of side effects which occurred in a dose-related manner are presented in Table 3.

Table 3: Incidence (%) of Side Effects with Amlodipine at Doses of 2.5 mg, 5.0 mg, and 10.0 mg or Placebo

Adverse Event	Amlodipine 2.5 mg n=275	Amlodipine 5.0 mg n=296	Amlodipine 10.0 mg n=268	Placebo n=520
Edema	1.8	3.0	10.8	0.6
Dizziness	1.1	3.4	3.4	1.5
Flushing	0.7	1.4	2.6	0.0
Palpitations	0.7	1.4	4.5	0.6

Other adverse experiences which were not clearly dose related but which were reported with an incidence greater than 1% in placebo-controlled clinical trials are presented in Table 4.

Table 4: Incidence (%) of Adverse Experiences Not Clearly Dose Related but Reported at an Incidence of >1% in Placebo-controlled Clinical Trials

Adverse Event	Amlodipine (n=1730)	Placebo (n=1250)
Headache	7.3	07.8
Fatigue	4.5	2.8
Nausea	2.9	1.9
Abdominal pain	1.6	0.3
Somnolence	1.4	0.6

The following events occurred in <1% but >0.1% of patients in controlled clinical trials or under conditions of open trials or marketing experience where a causal relationship is uncertain; they are listed to alert the physician to a possible relationship:

Cardiovascular: arrhythmia (including ventricular tachycardia and atrial fibrillation), bradycardia, chest pain, hypotension, peripheral ischemia, syncope, tachycardia, postural dizziness, postural hypotension, vasculitis; **Central and Peripheral Nervous System:** hypoesthesia, neuropathy peripheral, paresthesia, tremor, vertigo; **Gastrointestinal:** anorexia, constipation, dyspepsia, dysphagia, diarrhea, flatulence, pancreatitis, vomiting, gingival hyperplasia; **General:** allergic reaction, asthenia, back pain, hot flushes, malaise, pain, rigors, weight gain, weight decrease; **Musculoskeletal System:** arthralgia, arthrosis, muscle cramps, myalgia; **Psychiatric:** sexual dysfunction (male** and female), insomnia, nervousness, depression, abnormal dreams, anxiety, depersonalization; **Respiratory System:** dyspnea,** epistaxis; **Skin and Appendages:** angioedema, erythema multiforme, pruritus,** rash,** rash erythematous, rash maculopapular; **Special Senses:** abnormal vision, conjunctivitis, diplopia, eye pain, tinnitus; **Urinary System:** micturition frequency, micturition disorder, nocturia; **Autonomic Nervous System:** dry mouth, sweating increased; **Metabolic and Nutritional:** hyperglycemia, thirst; **Hemopoietic:** leukopenia, purpura, thrombocytopenia.

**These events occurred in less than 1% in placebo-controlled trials, but the incidence of these side effects was between 1% and 2% in all multiple dose studies.

The following events occurred in <0.1% of patients: cardiac failure, pulse irregularity, extrasystoles, skin discoloration, urticaria, skin dryness, alopecia, dermatitis, muscle weakness, twitching, ataxia, hypertension, migraine, cold and clammy skin, apathy, agitation, amnesia, gastritis, increased appetite, loose stools, coughing, rhinitis, dysuria, polyuria, parosmia, taste perversion, abnormal visual accommodation, and xerophthalmia.

Other reactions occurred sporadically and cannot be distinguished from medications or concurrent disease states such as myocardial infarction and angina.

Amlodipine has not been associated with clinically significant changes in routine laboratory tests. No clinically relevant changes were noted in serum potassium, serum glucose, total triglycerides, total cholesterol, HDL cholesterol, uric acid, blood urea nitrogen, or creatinine.

Amlodipine has been used safely in patients with chronic obstructive pulmonary disease, well-compensated congestive heart failure, coronary artery disease, peripheral vascular disease, diabetes mellitus, and abnormal lipid profiles.

Adverse reactions reported for amlodipine for indications other than hypertension may be found in the prescribing information for Norvasc®.

Postmarketing Experience

The following adverse reactions have been identified during post-approval use of telmisartan or amlodipine. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to estimate reliably their frequency or establish a causal relationship to drug exposure. Decisions to include these reactions in labeling are typically based on one or more of the following factors: (1) seriousness of the reaction, (2) frequency of reporting, or (3) strength of causal connection to telmisartan or amlodipine.

Telmisartan

The most frequently spontaneously reported events include: headache, dizziness, asthenia, coughing, nausea, fatigue, weakness, edema, face edema, lower limb edema, angioneurotic edema, urticaria, hypersensitivity, sweating increased, erythema, chest pain, atrial fibrillation, congestive heart failure, myocardial infarction, blood pressure increased, hypertension aggravated, hypotension (including postural hypotension), hyperkalemia, syncope, dyspepsia, diarrhea, pain, urinary tract infection, erectile dysfunction, back pain, abdominal pain, muscle cramps (including leg cramps), myalgia, bradycardia, eosinophilia, thrombocytopenia, uric acid increased, abnormal hepatic function/liver disorder, renal impairment including acute renal failure, anemia, and increased CPK, anaphylactic reaction, and tendon pain (including tendonitis, tenosynovitis).

Rare cases of rhabdomyolysis have been reported in patients receiving angiotensin II receptor blockers, including telmisartan.

Amlodipine

Gynecomastia has been reported infrequently and a causal relationship is uncertain. Jaundice and hepatic enzyme elevations (mostly consistent with cholestasis or hepatitis), in some cases severe enough to require hospitalization, have been reported in association with use of amlodipine.

USE IN SPECIFIC POPULATIONS

Pregnancy: Teratogenic Effects, Pregnancy Categories C (first trimester) and D (second and third trimesters). See Warnings and Precautions. **Nursing Mothers: Telmisartan:** It is not known whether telmisartan is excreted in human milk, but telmisartan was shown to be present in the milk of lactating rats. Because of the potential for adverse effects on the nursing infant, decide whether to discontinue nursing or discontinue the drug, taking into account the importance of the drug to the mother. **Amlodipine:** It is not known whether amlodipine is excreted in human milk. In the absence of this information, it is recommended to discontinue nursing while amlodipine is administered. **Pediatric Use:** Safety and effectiveness of TWYNSTA in pediatric patients have not been established. **Geriatric Use: TWYNSTA Tablets:** Of the total number of 3282 hypertensive patients receiving a telmisartan/amlodipine combination in clinical studies, 605 (18%) patients were 65 years of age or older and of these, 88 (3%) patients were 75 years and older. No overall differences in efficacy or safety of TWYNSTA tablets were observed in this patient population. **Telmisartan:** Of the total number of patients receiving telmisartan in clinical studies, 551 (18.6%) were 65 to 74 years of age and 130 (4.4%) were 75 years and older. No overall differences in effectiveness and safety were observed in these patients compared to younger patients and other reported clinical experience has not identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out. **Amlodipine:** Clinical studies of amlodipine besylate tablets did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects. Other reported clinical experience has not identified differences in responses between the elderly and younger patients. In general, dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range, reflecting the greater frequency of decreased hepatic, renal or cardiac function, and of concomitant disease or other drug therapy. Elderly patients have decreased clearance of amlodipine with a resulting increase of AUC of approximately 40-60%, and a lower initial dose may be required. Since patients age 75 and older have decreased clearance of amlodipine, start amlodipine or add amlodipine 2.5 mg to telmisartan. The lowest dose of TWYNSTA is 40/5 mg; therefore, initial therapy with TWYNSTA tablets is not recommended in patients 75 years of age and older. **Hepatic Insufficiency:** Monitor carefully and up-titrate slowly in patients with biliary obstructive disorders or hepatic insufficiency. Since patients with hepatic impairment have decreased clearance of amlodipine, start amlodipine or add amlodipine 2.5 mg to telmisartan. The lowest dose of TWYNSTA is 40/5 mg; therefore, initial therapy with TWYNSTA tablets is not recommended in hepatically impaired patients. **Race:** The magnitude of blood pressure lowering in black patients approached that observed in non-black patients but the number of black patients was limited (237 of 1461 patients).

OVERDOSAGE

Telmisartan

Limited data are available with regard to overdose in humans. The most likely manifestations of overdose with telmisartan tablets would be hypotension, dizziness, and tachycardia; bradycardia could occur from parasympathetic (vagal) stimulation. If symptomatic hypotension should occur, supportive treatment should be instituted. Telmisartan is not removed by hemodialysis.

Amlodipine

Single oral doses of amlodipine maleate equivalent to 40 mg/kg and 100 mg/kg amlodipine in mice and rats, respectively, caused deaths. Single oral doses equivalent to 4 or more mg/kg amlodipine in dogs (11 or more times the maximum recommended human dose on a mg/m² basis) caused a marked peripheral vasodilation and hypotension.

Overdosage might be expected to cause excessive peripheral vasodilation with marked hypotension. In humans, experience with intentional overdose of amlodipine is limited. Reports of intentional overdose include a patient who ingested 250 mg and was asymptomatic and was not hospitalized; another (120 mg) who was hospitalized underwent gastric lavage and remained normotensive; the third (105 mg) was hospitalized and had hypotension (90/50 mmHg) which normalized following plasma expansion. A case of accidental drug overdose has been documented in a 19-month-old male who ingested 30 mg amlodipine (about 2 mg/kg). During the emergency room presentation, vital signs were stable with no evidence of hypotension, but a heart rate of 180 bpm. Ipecac was administered 3.5 hours after ingestion and on subsequent observation (overnight) no sequelae was noted.

If massive overdose should occur, active cardiac and respiratory monitoring should be instituted. Frequent blood pressure measurements are essential. Should hypotension occur, cardiovascular support including elevation of the extremities and the judicious administration of fluids should be initiated. If hypotension remains unresponsive to these conservative measures, administration of vasopressors (such as phenylephrine) should be considered with attention to circulating volume and urine output. Intravenous calcium gluconate may help to reverse the effects of calcium entry blockade. As amlodipine is highly protein bound, hemodialysis is not likely to be of benefit.

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