## Children With Epilepsy Already at Risk for Fractures

## BY DIANA MAHONEY New England Bureau

LOS ANGELES — Children with treated epilepsy show significant osteopenia, placing them at high risk for pathological fractures, early results from an ongoing prospective study have shown.

The findings suggest that epilepsy and/or its treatment either induce accelerated bone loss or are primary determinants of failure to accrue normal bone mineral density, according to Dr. Marc K. Drezner, a professor of medicine at the University of Wisconsin, Madison.

While older patients with treated epilepsy have osteopenia and pathologic fractures at a significantly higher rate than the general population, controversy exists over whether the osteopathy results from epilepsy and its treatments or reflects agedependent bone disease, Dr. Drezner said in a poster presentation at the annual meeting of the Child Neurology Society.

Dr. Drezner and his associates compared age-normalized total body bone mineral density (BMD) z scores of 8- to 18year-old patients with treated epilepsy and healthy controls, excluding epilepsy patients who were non-ambulatory, had chronic diseases other than epilepsy, or were taking medications with known adverse bone effects.

The investigation included 34 treated epilepsy patients and 24 healthy controls (mean age 13) with comparable gender

ARTHROTEC® (diclofenac sodium /misoprostol) tablets  $(\mathfrak{b})$ Before prescribing, please consult complete prescribing information. CONTRAINDICATIONS AND WARNINGS CONTRAINDICATIONS AND WARNINGS ARTHRIDEC" CONTAINS DICLOFENAC SODIUM AND MISOPROSTOL ADMINISTRATION OF MISOPROSTOL TO WOMEN WHO ARE PREGNANT CAN CAUSE ABORTION, PREMATURE BIRTH, OR BIRTH DEFECTS. UTERINE RUPTURE HAS BEEN REPORTED WHEN MISOPROSTOL WAS ADMINISTERED IN PREGNANT WOMEN TO INDUCE LABOR OR TO NOLICE ABORTION BEYOND THE EIGHTH WEEK. OF PREGNANTWOMEN (See CONTRAINDICTIONS, WARNINGS and PRECAUTIONS). PATIENTS MUST BE ADVISED OF THE ABORTIFACIENT PROPERTY AND WARNED NOT TO GIVE THE PRIJE TO THERS. HE DRUG TO OTHERS. Inte UNIG 10 UTERS. ARTHROTEC should not be used in women of childhearing potential unless the patient requires nonsteroidal anti-inflammatory drug (NSAID) therapy and is at high risk of developing gastric or duodenal ulceration or of welveloping complications from gastric or duodenal ulcers associated with the use of the NSAID. (See WARNINGS). In such patients, ARTHROTEC may be prescribed if the patient: - lisk had a negative serum regrant/ test within 2 weeks prior to beginning therapy. - is capable of complying with effective contraceptive measures. - has received both oral and wither warming of the hazards of misoprostol, the risk of possible contraception failure, and the danger to other women of childbearing potential should the drug be taken by mistake. be taken by mistake. will begin ARTHROTEC only on the second or third day of the next normal menstrua Ardiovascular Risk •NSAIDs may cause an increased risk of serious cardiovascular thrombotic events, mycardial infarction, and struke, which can be fatal. This risk may increase with duration of use. Patients with cardiovascular disease or risk factors for cardiovascular disease may be a trgeater risk, lese **WARNINGS**. •ARTIRHOTEC is contraindicated for treatment of perioperative pain in the setting of coronary artery bypas graft (CAGB) sugger (Dee **WARNINGS**). **Sastoninestinal Risk**: NSAIDs cause an increased risk of serious gastrointestinal adverse verts including bleeding, ulceration, and perforation of the stomach or intestines, which can be tail. These events can occur at any time during use and without worning symptoms. Eldety alation. Each event scan occur at any time during use and without worning symptoms. Bidety alations are at greater risk to serious gastrointestinal events (see **WARNINGS**). **DICATIONS AND USAGE**: Carefully consider the potential benefits and risks of ARTIRHOTEC India: These events can occur at any time building user and using symptomics: building symptomics can be predented and a symptomic symptomic symptomics. 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Severe, rarely fatal, anaphylactic-like reactions to diclofenac solum have been reported in such patients (see WARNINGS - Anaphylactic) Meactions, and PRECAUTIONS - Preexisting Asthmal, ARTHROTEC is contraindicated for the treatment of perionerative noin in the sottion or corrowy arene howases matel (TARB) suprey (see howed per-operative pain in the setting of coronary artery bypass graft (CABG) surgery (see boxe CONTRAINDICATIONS AND WARNINGS). WARNINGS: Regarding misoprostol: See boxed CONTRAINDICATIONS AND WARNINGS: Regarding diclofenae: See boxed CONTRAINDICATIONS AND WARNINGS. Realisting disclosures are based CONTRAINDIGATIONS AND WARNINGS. CARDIOVASCULAR EFFECTS: Cardiovascular Thrombotic Events Cinical trials or several COX-2 selective and nonselective NSAIDs of up to three years duration have shown an increased risk of serious cardiovascular (CV) thrombotic events, mocardial infaction, and stroke, which can be fatal. All NSAID, both COX-2 selective and nonselective, may have a similar risk. Patients with known CV disease or risk factors for CV disease may be at greater risk. To minimize the potential risk for an adverse CV event in patients treated with an NSAID, the lowest effective does bould be used bound bount the systems that associated with NSAID, the lowest effective does bould be used bound bount the signs and/or symptoms of serious CV events and the steps to take if they occur. There is no consistent evidence associated with NSAID takes. The concurrent use of aspirin and an NSAID dees increase the risk of serious G1 events less G1 WARNINGS. Two lange, concurbed Links of a CUX-2 selective NSAID for the treatment of pain in the first 10-14 days following CABG surgery found an increased incidence of myocardial infraction and stroke (see CONTRAINDIGATIONS).

Insuence or importance initiation and strole (see Low I KAINUCLATIONS). Hypertension: NSAIDs including ARTHROTEC, can lead to onset of new hypertension or worsening of pre-existing hypertension, either of which may contribute to the increased incidence of CV events. Patients taking thiazides or loop diuretics may have impaired response to these therapies when taking NSAIDs. NSAIDs, including ARTHROTEC, should be used with caution in patients with hypertension. Blood pressure (BP) should be monitored closely during the initiation of NSAID treatment and throughout the course of therapy. Congestive Heart Failure and Edema: Fluid retention and edema have been observed in some patients taking NSAIDs. ARTHROTEC should be used with caution in patients with fluid retention or heart failure.

inal Effects—Risk of Ulceration, Bleeding and Perforation: NSAIDs, THROTEC, can cause serious astrointestinal (GI) adverse events including current currence—nask or uncertation, Bleeding and Perforation: NSADs, including ARTHROTEC, can cuase serious gastrointestrial (B) adverse events including inflammation, bleeding, ulceration, and perforation of the stamach, small intestine, or large intestine, which can be fatal. These serious adverse events can occur at any time, with or without warming symptoms, in patients treated with NSADs. Only one in free patients, who develop a serious gastrointestrial (B) adverse event on NSAID therapy, is symptomatic. Upper GI ulcers, gross bleeding, or perforation caused by NSADs court in approximately 1% of patients treated for 3-6 months, and in about 24% of patients treated for one year. These trends continue with longer duration of use, increasing the likelihood of developing a serious GI event at some time during the curuse of therapy. However, even short-term therapy is not withhout risk. NSADs should be prescribed with a prior history of ulcer disease or gastrointestinal bleeding. Patients with a prior history of ulcer disease or gastrointestinal bleeding. Patients are a greater than 10-fold increased risk for developing a GI bleed compared to patients treated with NSADs. inertief of these risk factors, build factors and increase the risk of of breeding in patients treated with NSAIDs include concomitant use of oral corticosteroids or anticoagulants, longer duration of NSAID therapy, smoking, use of alcolol, older age, and poor general health status. Most spontaneous reports of fatal GI events are in elderly or debilitated patients and therefore, special

Interesting reports of related to Pretenda et all relevents of declinated patients and interesting, special minimizes the potential risk for an adverse GI event in patients treated with an NSAID, lowest effective does should be used for the shortest possible duration. Patients and sicians should remain alert for signs and symptoms of GI ulcerations and bleeding during NSAID apy and promptly initiate additional evaluation and treatment if a serious GI event is supported. For should include accontinuation of the NSAID until a serious GI adverse event is ruled out. For h risk patients, alternate therapies that do not involve NSAIDs should be considered.

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diclofenac treatment. In a large, open, controlled trial, meaningful elevations of ALT and/or AST occurred in about 4% of 3,700 patients treated for 2–6 months, including marked elevations (ie, more than 8 times the ULN) in about 1% of the 3,700 patients. In that open-label study, a higher incidence of borderline (less than 3 times the ULN), moderate (3–8 times the ULN), and marked (-8 times the ULN) elevations of ALT or AST was observed in patients receiving diclofenac when compared to other MSAIDs.

Les times the ULNI elevations of ALI or AS1 was observed in patients receiving allocitenac Withe compared to other NSAIDs.
Postmarketing surveillance has found rare cases of severe hepatic reactions, including liver necrosis, jaunidica, and furiminant fatal hepatitis with nal without jaundice. Some of these rare reported cases underwent liver transplantation. Severe hepatotoxicity may develop without a prodrame of distinguishing symptoms. Transaminases should be monitored within 4 to 8 weeks after initiating treatment with dicidenac. The misoprostol component of ARTHADTEC does not appear to exacerbate the hepatic effects caused by the dicidenac solution component. A patient with symptoms and/or signs suggesting liver dysfunction, or in whom an abnormal liver test has addror symptoms consistent with ince disease development of more severe hepatic reaction while on therapy with ARTHADTEC. If abnormal liver tests persist or worsen, if clinical signs addror symptoms consistent with the disease development of more amelfestations soccure (e. essinophilia, rash, etc), ARTHADTEC should be discontinued immediately. Inform patients of the warming signs and symptoms of hepatotoxicity (eg, nausea, fatigue, lethargy, pruntus, jaundice, should be if these signs and symptoms appear.
Anaphylactoid reactions. As with other NSAIDs, anghylactoid reactions may occur in patients

Anaphylactoid reactions: As with other NSADs anaphylactoid reactions may occur in patients without known prior exposure to ARTHROTEC. ARTHROTEC should not be given to patients with the aspinin triad. This symptom complex typically occurs in astimatic patients who experience rinnis with or without nasa polyby, or who exhibit evere, potentially triad bronchospasm after taking aspinin or other NSADs. Emergency help should be sought in cases where an anaphylactoid reaction pervise.

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 Pregnancy: In late pregnancy, as with other NSAIDs, ARTHROTEC should be avoided because it may cause premature closure of the ductus arteriosus.
 PREQUIPIONS. General: ARTHROTEC cannot be expected to substitute for corticosteroids to relate to fiscion is made to discontinue corticosteroids. The phermacological activity of ARTHROTEC is not prolonged corticosteroids the using the tract or the activity of these diagnostic sign in detecting corticion is mylate to discontinue corticosteroids. The phermacological activity of ARTHROTEC is meany be due to fluid retention, court in gross GI blood less, or an incompletely described effect upon explicitories of prevention should be solved in the careful and the service of the careful and the Service and the service and the service of the careful and the service of the careful and the service of the ser

manifestations occur (e.g. exsimphilia, rash, etc) or if abnormal liver tests persist or worsen, ARTHPOTEC should be discontinued. **Drug interactions:** ARTHPOTEC may increase the serum levels of digoxin, methotrexate, lithium and phenobarbital, patients should be monitored for toxich, ARTHPOTEC may increase polyclosprine nepthrotixcity, accentrate Gibleodign in patients on warfain, and inhibit he activity of antihypertensives and diuretics. Use caution in administering ARTHPOTEC with any of these agents, particularity if real function is impaired. Asprin may diminish the thrapeutic effect of dicforena and coadministering with ARTHPOTEC. Animal toxicology: A reversible diarrhea and should not be coadministered with MRTHPOTEC. Animal toxicology: A reversible increase in the number of normal surface gastric epithelial cells occurati in the day and nuese during long-term toxicology studies with misoprosti. No such increase has been observed to humans administered misoprosti for up to 1 year. An apagenet response of the female mouse to misoprostal in long-term studies at 100 to 1000 times the human dose was hyperostasis, mainly of the medulia di stemebrae. Hyperostasis di not occur in long-term studies in the day and rat and has not been seen in humans treade with misoprostal. **Carcinogenesis, mutagenesis, impairment of fertility**. Long-term animal studies to refutily have been performed with each component of ARTHPOTEC given alone. ARTHPOTEC become text brites hamster ovary cell (CH0/HCPRI) forward mutation test, the rat lymphory and misoprostal at doese up to 2Ak the recommended maximum human dose of 36 mg/m/dyu vas en tumnice lic. a 27-monuse carcinogeneity study, vari misoprostal at doess up to 2K the recommended maximum human dose of 36 mg/m/dyu exert tumorine lic. Ba 7-monuse carcinogeneity study, vari misoprostal at doess up to 2K the recommended maximum human does of 36 mg/m/dyu exert tumorine lic. Ba 7-m mouse carcinometics with varia nonsental at doess up to 8K the recommended maximum h

Less, the callinger nation less of value (CL)/norm / toward less that a 24-more at carcinogenicity study, or al misoporstol at does up to 24k the recommended maximum human dose of 16 mg/m//day was not tumorigenic. In a 21-mo mouse carcinogenicity study, oral misoporstol at does up to 24k the recommended maximum human dose based on body surface area, was not tumorigenic. May a compare the maximum human dose based on body surface area, was not tumorigenic. The mole and fremel kereding rats in an oral dose-range of 1 to 100 times the recommended maximum human dose based on body surface area) produced dose-related pre- and post-implantation losses and a significant decrease in the number of live pups born at the highest dose. These findings suggest the possibility of a general adverse effect on fertility in males and femelaes in a 24-mo rat carcinogenicity study, oral disclofenae sodium pt (1.46m/m) body surface area), this dose represents 0.08 times the recommended maximum human dose based on body surface area) to 0.005k the recommended maximum human dose areals, this disclofenae taxis, in a 24-mo rat carcinogenicity study, oral diclofenae sodium at doses up to 0.005k the recommended maximum human dose based on body surface areal, bits dose represents 0.08 times the recommended maximum human dose based on body surface areal adverse davies and to 100 the tercommended maximum human dose based on body surface areal adverse adverse height 0.14 fm/m) or 0.15k the recommended maximum human dose based on body surface areal adverse davies davies up to 0.005k the recommended maximum human dose based on body surface areal adverse davies davies adverse adverse based adverse davies adverse davies dav

Pregnancy: Pregnancy category X: See boxed CONTRAINDICATIONS AND WARNINGS regarding misoprostol.

Non-terratogenic effects: See boxed CONTRAINDICATIONS AND WARNINGS. Non-teratogenic effects: See bosed CONTRAINDICATIONS AND WARNINGS. Misoprostin may endanger pregnancy (may cause abrotion) and thereby cause ham to the fetus when administered to a pregnant woman Misoprostin may produce uterine contractions, uterine bleeding, and expansion of the products of conception. Misoprostin has been used to rigen the cervix, to induce labor, and to treat postpartine herrorhage of the uterus. Uterine nyture, ammicir, fluid embism, severe gental bleeding, shock, fetal brackcardia, and fetal and material death have been reported. Higher doses of misoprostol, including the 10thmg tablet, may increase the risk of complications from uterine hyperstimulation. ARTHR/DTEC, which contains 20thng of misoprostol. Biskly to have a genet risk of uterine hyperstimulation than the 10thng tablet of misoprostol. Abortions caused by misoprostol may be incomplete. If a woman is or becomes pregnant while taking this drug, the drug should be discontinued and the patient apprised of the potential hazard to the fetus. Cases of anmictic fluid embolism, which resulted in maternal and fetal death, have been reported misoprostol loginally and/or orally orear arange of doses. Because of the known effects of nonsternicial ami-inflammatory drugs, including the ficileraec sodium component of ARTHR/DTEC, on the fetal cardioascular system (closure of ductus arteriosus), use during pregnancy (parcularly late pregnary) should be avoided. **Teratogenic effects:** See boosed **WARNINGS**. Congenital anomalies sometimes associated discoprate effects: See boosed **WARNINGS**. Congenital anomalies sometimes associated misoprostol vaginales and/or colly orea arange of doses.

arteriosus), use during pregnancy (particularly rate pregnancy) should be avoided. **Teratogenic effects:** See boxed WARNINGS. Congenital anomalies sometimes associated with fetal death have been reported subsequent to the unsuccessful use of misoprostol as an environment.

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ntifacient, but the drug's teratogenic mechanism has not been demonstrated. Several reports he literature associate the use of misoprostol during the first trimester of pregnancy with skull ects, cranial nerve palsies, facial malformations, and limb defects.

Generation contain the participation in manufacture and the participation of the participatio

Labor and Delivery: In rat studies with NSAIDs, as with other drugs known to inhibit prostaglandin synthesis, an increased incidence of dystocia, delayed parturition, and decreased pion survival oncurred.

Pediatric use: Safety and effectiveness of ARTHROTEC in pediatric patients have not heen established

been established. Geriatric use: As with any NSAIDs, caution should be exercised in treating the elderly (65 years and older, 0f the more than 2.100 subjects in clinical studies with ARTHROTEC, 25% were 65 and over. (while 6% were 75 and over. In studies with dictofenac, 31% of subjects were S5 and over. No verall differences in response to the source is nadery or the elderly (bf studies) and verse to verall differences in response between these subjects and younger subjects, 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. As with any NSAID, the elderly are likely to tolerate adverse events less well than younger patients. To Cliofenac is known to be substantially excreted by the kidney, and the risk of toxic reactions to ARTIHROTEC may be greater in patients with impaired renal function. Because elderly patients are more likely to have decreased renal function, case should be taken in does election, and it may be useful to momitor renal function. Based on studies in the elderly, not adjustment of the does of ARTIHROTEC is necessary in the because of low body weight or disorders associated with ARTIHROTEC. **AUVERSE REACTIONS: Adverse reactions** associated with **ARTIHROTEC** 

Decade of NW Doty weight to discusses associated with ARTHROTEC Adverse reaction information for ARTHROTEC is derived from Phase III multinationa controlled clinical trials in over 2,000 patients, receiving ARTHROTEC 50 or ARTHROTEC 75, ar well as from binded, controlled trials of Voltaren<sup>®</sup> Delayed-Release Tablets (diciofenac) and Cytotec<sup>®</sup> Tablets (misoprosto)).

Adverse reactions associated with ARTHROTEC Gastrointestinal. In clinical trials, the most frequently reported adverse events were GI disorders: abdominal pain (21%), diarrhea (19%), dyspepsia (14%), nausea (11%), and flatulence (9%). ARTHROTEC can cause more abdominal pain, diarrhea and other GI symptoms than diclofenac alone.

flatulence (9%). ARTHRDTEC can cause more abdominal pain, diarrhea and other GI symptoms than diofennea abne. Diarrhea and abdominal pain developed early in the course of therapy, and were usually self-limited (resolved after 2 to 7 days). Rear instances of profound diarhea leading to severe dehydration have been reported in patients receiving misoprostol. Patients with an underlying condition such as inflammatry bowel disease, or those in without dehydration, were it to occur, would be dangerous, should be monitoted carefully if ARTHRDTEC to prescribed. The incidence of diarrhea can be minimized by administering ARTHRDTEC with fload and by avoiding coadministration with magnesium-containing antacad. **Synecological** Gynecological disorders previously reported with misoprostol use have also been reported for women receiving aRTHRDTEC is been bower. Alter Manuel La able and market to administration of ARTHRDTEC is been bower. Alter Manuel La able and watertaken to rule out genecological pathology. (See bowd CONTRATINDICCINOS AND WARNINGS) Elderly. Overall, there were no significant differences in the safety profile of her NADLRO vers<sup>1</sup>00 patients by Seyars of age or older compared with younger patients. Other adverse experiences reported occasionally or rarely with ARTHRDTEC is carby are direction, malaise, sepsis. *Cardiovascular system*: Arrhythmia, atrial fibrillation, congestive heart failure, hypertension, huceased CYK, increased LDH, mycoardial infaction, palpitations, phylotension, huccased CYK, increased LDH, mycoardial infaction, applications, phylotension, huccased CYK, increased LDH, mycoardial infaction, analyse, sepsis. *Cardiovascular system*: Arrhythmia, atrial fibrillation, congestive heart failure, hypertension, hypotension, huccased CYK, increased LDH, mycoardial infaction, applications, phylotension, huccased CYK, increased LDH, mycoardial infaction, and and the source source intervention areas and the adverse applyted and the soblis, preventione venticular constructions taiure, hypertension, hypertension, increased CPK, increased LDH, myocardial infraction palpitations, phlebitis, premature ventricular contractions, syncope, tachycardia, vasculitis **Central and peripheral nervous system**. Coma, convulsions, dizziness, drowsiness headache, hyperestihesia, hypertonia, hypoesthesia, insomnia, meningitis, migraine, neuralgis paresthesia, asomolence, termor, vertigo. **Digestive**. Anorexia, appette changes constipation, dry mouth, dysphagia, enteritis, esophageal ulceration, esophagitis, encutation gastristis, gastroscophageal relific, GI bieding, GI encolasm bening, glossitis, hearthurr hematemesis, hemorthoids, intestinal perforation, peptic ulcer, stomattis and ulcerativ , nemormoids, intestinal perforation, peptic ulever, stomatitis and ule tenesmus, vomiting, *Female reproductive disorders*: Breast , intermenstrual bleeding, leukorhea, menstrual disorder, menorhagia, *Hemic and lymphatic system*: Agranulocytosis, anemia adaete dysmeormba, intermestrula lueading, leukorhea, menstrual disorder, menormbaja, vagnal hemorrhaga. Hemic and / ymphatic system: Aganulocytosis, nemia, aplastic anemia, coagulation time increased, ecchymosis, eosinophilia, epistaxis, hemolytic anemia, leukocytosis, leukopenia, kymphadenopathy, melena, pancytopenia, bypersensitivity: Angioedema, lanyngeal/phanyngeal dedma, urticaria. Liver and biliary system Abnormal hepatic function, bilirubinemia, hepatitis, jaundice, liver fallure, pancreatitis. Mele raproductive disorders: Impotence, perineal pain. Metabolic and nutritional: Alkaline phosphatase increased. BUM increased, delviariano (gycosura, gout, hyperchilestrolemia, hypedfycemia, hypeuricemia, hypoptycemia, hyponatermia, periothial edema, porphria, hueight changes. Musculoskeletal system: Arthrafuaja, myalia, Psychiatrice: Anxiety, concentration impaired, confusion, depression, disorientation, dream abnormalities, penphigod reaction, photosensitivy, puritus, puritus ani, rash, situ ulearation, Stevens-Johnson syndrome, sweating increased, dividration. Jinany Stevens-Johnson syndrome, sweating increased, dividration, fuetama increased, Steven-Johnson syndrome, sweating increased, toki cipidermal necrolysis. Special senses: Hearing iongian/olynia, papilary necrois, proteinuria, enel faliare, urinary met tari timeticin. Vision Ambyogia, blurred vision, conjunctivitis, diplopia, glaucoma, iritis, lacrimation abnormal. OVERDOSAGE The toxic dos of ARTHROTEC has not been determined. However, signs of

bindness, vision abnormal. **OVERDOSAGE** The toxic dose of ARTHROTEC has not been determined. However, signs of overdosage from the components of the product may include. *diclofenae*—GI compliants, confusion, drowsiness or general hypotonia; *misoprostol*—sedation, tremor, convulsions, dysnee, abdominal pain, diarthea, fever, palptations, hypotension, or bradycardia. Symptoms of overdosage with ARTHROTEC should be treated with supportive therapy. In case of acute overdosage, dastric lavage is recommended. Induced diversis may be beneficial. The use of oral activated charcoal may help to reduce the absorption of diclofenae sodium and misoprostol. activated chartoal may help to reduce the absorption of decorlents solutim and missiparsion. HOW SUPPLIES. ARTHRHOTE: (disclorence sodium/issopratol) is sympled as a film-coated tablet in dosage strengths of either 50 mg diclorence sodium/200 mcg missopratol or 75 mg diclorence sodium/200 mcg missopratol. The 50 mg 200 mg closes are strength is a round, hicrower, white to off-white tablet imported with four "As" encicing a "50" in the middle on one side and "SEARE" and "141" on the other. The 75 mg 200 mg closes are strength is a round, hicrower, white to off-white tablet imported with four "As" encicing a "55" in the middle on one side and "SEARE" and "142" on the other. The 75 mg 200 mg closes are strength is a round, hicrower, white to off-white tablet imported with four "As" encicling a "55" in the middle on one side and "SEARE" and "142" on the other.

US	Strength [Value]	NDC Number	Size
ne he tic ath	50/200	0025-1411-60 0025-1411-90 0025-1411-34	bottle of 60 bottle of 90 carton of 100 unit dose
he of of	75/200	0025-1421-60 0025-1421-34	bottle of 60 carton of 100 unit dose
es ho	Store at or belo	w 25°C (77°F), in a dry area.	

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and weight distributions, calcium intake, and activity levels.

The mean BMD z scores were -0.31 for the epilepsy patients and 0.71 for the control group, a statistically significant difference, Dr. Drezner stated. Of the 34 epilepsy patients, 8 had BMD measures more than one standard deviation below normal, indicating osteopenia, while none of the healthy controls had osteopenic measures. Also, 8 of the control patients had BMD measures more than one standard deviation above normal, compared with only 5 of the epilepsy patients.

This study, which is still enrolling patients, is supported by a grant from Glaxo-SmithKline.

## Genes Hold Key To Nonresponse To Biologics in JIA

VIENNA — The day is fast approaching when physicians will be able to forecast which juvenile idiopathic arthritis patients will respond to anti-tumor necrosis factor-a therapy based upon gene-expression profiling conducted after just a few days of treatment, Dr. Joern Kekow predicted at the annual European congress of rheumatology.

About 30% of JIA patients prove to be nonresponders to anti-TNF- $\alpha$  therapy. The ability to selectively target it to those most likely to benefit while sparing others from needless exposure to side effects and



Promising targets include: uPAR, GADD34, ICAM-1, TNF- $\alpha$ , **interferon-1** β, and MIP-1 $\alpha$ .

DR. KEKOW

expense will be a most welcome development, observed Dr. Kekow of the University of Magdeburg (Germany).

She reported on nine patients, mean age 15, with JIA—five with oligoarthritis, three with enthesis-related arthritis, and one with psoriatic arthritis-who underwent microarray analysis of the expression of 22,000 of their genes prior to and again 72 hours after starting etanercept or infliximab therapy.

Expression of roughly 500 genes proved to be significantly upregulated or downregulated in at least five of the nine patients within the first 3 days of anti-TNF- $\alpha$  therapy. Changes in the expression of a subgroup of these genes correlated strongly with clinical outcomes as assessed at 3 months.

The promising candidates include uPAR, GADD34, ICAM-1, TNF-α, interferon-1 $\beta$ , MIP-1 $\alpha$ , manganese superoxide dismutase, COX-2, PBEF, and GRO- $\alpha$ , she said at the meeting, sponsored by the European League Against Rheumatism.