Migraine Risk Grows After Surgery for Marfan

BY BRUCE JANCIN

Denver Bureau

MUNICH — Patients with Marfan syndrome have a sharply increased prevalence of migraine, especially migraine with aura, according to Dutch investigators.

Moreover, Marfan syndrome patients who undergo aortic root surgery experience a double headache of sorts; that is, an independent further increase in the risk of migraine, Dr. Jeroen C. Vis reported at the annual congress of the European Society of Cardiology.

The explanation for the association between aortic root surgery and a high rate of migraine in Marfan syndrome patients is unclear. One possibility is that the aortic graft throws off microemboli, which trigger headache attacks, according to Dr. Vis of Academic Medical Centre, Amsterdam.

He reported on 97 adults with Marfan syndrome who had a mean age of 39 years, and 80 age- and sex-matched controls. All underwent a clinical interview in which diagnosis of migraine was based on International Headache Society criteria.

Migraine was diagnosed in 44% of the Marfan patients, compared with 28% of controls. Thirty-seven percent of Marfan patients had migraine with aura, as did 10% of controls.

The prevalence of migraine among controls was higher than usual. This is most likely due to the influence of familial migraine; 16 of the 80 controls were first-degree relatives of participating Marfan syndrome patients, Dr. Vis said.

In this study, Marfan syndrome was an independent risk factor for migraine overall, and conferred an adjusted 2.4-fold increased risk, along with a 6.2-fold increased risk for migraine with aura.

Thirty-five percent of the Marfan pa-

Marfan syndrome patients who undergo aortic root surgery have a double headache; that is, an independent further increase in the risk of migraine.

tients underwent aortic root surgery. A history of the surgery was independently associated with a 3.9-fold increased risk of migraine and a 4.5-fold greater risk of migraine aura.

The investigators

looked at other cardiovascular features of Marfan syndrome. Neither mitral valve surgery, aortic dilatation, aortic dissection, mitral valve prolapse, nor mitral regurgitation showed an independent association with an increase in migraine. Aortic root surgery was unique in this re-

Dr. Vis said he and his colleagues plan as a next step to look at headache patterns in patients without Marfan syndrome who have undergone aortic root surgery. The goal will be to determine whether a history of the surgery is a risk factor for migraine and migraine with aura in them, too.



Dissection flaps (arrows) are shown in a Marfan patient before aortic root surgery.

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AVIX (clopidogrel bisulfate) is indicated for the reduction of atherothrombotic events as

ix (coprologrel bisultate) is indicated for the reduction of atherothrombotic events as 55.

Sent MI, Recent Stroke or Established Peripheral Arterial Disease
patients with a history of recent impocardial infarction (MI), recent stroke, or established
pheral arterial disease, PLAVIX has been shown to reduce the rate of a combined endtof onew ischemic stroke (falat or not), end MI (fatat or not), and other vascular death.

16 Coronary Syndrome

patients with non-ST-segment elevation acute coronary syndrome (unstable
ina/non-O-wave MI) including patients who are to be managed medically and those
are to be managed with percutaneous coronary intervention (with over without stent).

286, PLAVIX has been shown to decrease the rate of a combined endpoint of
flowascular death, MI, stroke, or refractory ischemia.

patients with ST-segment elevation acute myocardial infarction, PLAVIX has been
with or teduce the rate of death from any cause and the rate of a combined endpoint
eath, re-infarction or stroke. This benefit is not known to pertain to patients who
ive primary angioplasty.

Jursing Mothers

Unising Mothers

Unisin ic Use and effectiveness in the pediatric population have not been established.

latric Use the total number of subjects in the CAPRIE, CURE and CLARITY controlled clinical stud-approximately 50% of patients treated with PLAVIX were 65 years of age and older, and were 75 years and older. In COMMIT, approximately 50% of the patients treated with VIX were 60 years and older, 26% of whom were 70 years and older, observed risk of thrombotic events with clopidogrel plus apprin versus placebo plus in by age category is provided in Figures 3 and 6 for the CURE and COMMIT trials, septimely (see CLINICAL STUDIES). The observed risk of bleeding events with clopidogrel asprin versus placebo plus asprint by age category is provided in Tables 5 and 6 for CURE and COMMIT trials, respectively (see ADVERSE REACTIONS).

Event	PLAVIX	Placebo	P-value
	(+ aspirin)*	(+ aspirin)*	
	(n=6259)	(n=6303)	
Major bleeding †	3.7 ‡	2.7 €	0.001
Life-threatening bleeding	2.2	1.8	0.13
Fatal	0.2	0.2	
5 g/dL hemoglobin drop	0.9	0.9	
Requiring surgical intervention	0.7	0.7	
Hemorrhagic strokes	0.1	0.1	
Requiring inotropes	0.5	0.5	
Requiring transfusion (≥4 units)	1.2	1.0	
Other major bleeding	1.6	1.0	0.005
Significantly disabling	0.4	0.3	
Intraocular bleeding with			
significant loss of vision	0.05	0.03	
Requiring 2-3 units of blood	1.3	0.9	
Minor bleeding ¶	5.1	2.4	< 0.001

* Other standard therapies were used as appropriate.
† Life threatening and other major bleeding.
‡ Major bleeding event rate for PLAVIX + aspirin was dose-dependent on aspirin:
< 100 mg=2.0%; 100-200 mg=3.5%; ≥ 200 mg=4.9%
Major bleeding event rates for PLAVIX + aspirin by age were: <65 years = 2.5%, ≥65 to
<75 years = 4.1%, ≥75 years 5.9%
Major bleeding event rate for placebo + aspirin was dose-dependent on aspirin:
<100 mg=2.0%; 100-200 mg=2.3%; ≥ 200 mg=4.0%
Major bleeding event rates for placebo + aspirin by age were: <65 years = 2.1%, ≥65 to
<75 years = 3.1%, ≥75 years 3.6%
Led to interruption of study medication.
Nient-vtvo everent 192% of the patients in the CURE study received heparin/LMWH, and

and similar in both groups as shown in Table 6 below. Table 6: Number (%) of Patients with Bleeding Events in COMMIT					
Type of bleeding	PLAVIX (+ aspirin) (N=22961)	Placebo (+ aspirin) (N=22891)	P-value		
Major* noncerebral or cerebral bleeding**	134 (0.6%)	125 (0.5%)	0.59		
Major noncerebral	82 (0.4%)	73 (0.3%)	0.48		
Fatal	36 (0.2%)	37 (0.2%)	0.90		
Hemorrhagic stroke	55 (0.2%)	56 (0.2%)	0.91		
Fatal	39 (0.2%)	41 (0.2%)	0.81		
Other noncerebral bleeding (non-major) Any noncerebral bleeding	831 (3.6%)	721 (3.1%)	0.005		
	896 (3.9%)	777 (3.4%)	0.004		

	% Incidence (% Discontinuation)		
Body System Event	PLAVIX [n=9599]	Aspirin [n=9586]	
Body as a Whole – general disorders			
Chest Pain	8.3 (0.2)	8.3 (0.3)	
Accidental/Inflicted Injury	7.9 (0.1)	7.3 (0.1)	
Influenza-like symptoms	7.5 (<0.1)	7.0 (<0.1)	
Pain	6.4 (0.1)	6.3 (0.1)	
Fatigue	3.3 (0.1)	3.4 (0.1)	
Cardiovascular disorders, general			
Edema	4.1 (<0.1)	4.5 (< 0.1)	
Hypertension	4.3 (<0.1)	5.1 (<0.1)	
Central & peripheral nervous system disorders			
Headache	7.6 (0.3)	7.2 (0.2)	
Dizziness	6.2 (0.2)	6.7 (0.3)	
Gastrointestinal system disorders			
Any event	27.1 (3.2)	29.8 (4.0)	
Abdominal pain	5.6 (0.7)	7.1 (1.0)	
Dyspepsia	5.2 (0.6)	6.1 (0.7)	
Diarrhea	4.5 (0.4)	3.4 (0.3)	
Nausea	3.4 (0.5)	3.8 (0.4)	
Metabolic & nutritional disorders			
Hypercholesterolemia	4.0 (0)	4.4 (<0.1)	
Musculo-skeletal system disorders			
Arthralgia	6.3 (0.1)	6.2 (0.1)	
Back Pain	5.8 (0.1)	5.3 (<0.1)	
Platelet, bleeding, & clotting disorders			
Purpura/Bruise	5.3 (0.3)	3.7 (0.1)	
Epistaxis	2.9 (0.2)	2.5 (0.1)	
Psychiatric disorders			
Depression	3.6 (0.1)	3.9 (0.2)	
Respiratory system disorders			
Upper resp tract infection	8.7 (<0.1)	8.3 (<0.1)	
Dyspnea	4.5 (0.1)	4.7 (0.1)	
Rhinitis	4.2 (0.1)	4.2 (<0.1)	
Bronchitis	3.7 (0.1)	3.7 (0)	
Coughing	3.1 (<0.1)	2.7 (<0.1)	
Skin & appendage disorders			
Any event	15.8 (1.5)	13.1 (0.8)	
Rash	4.2 (0.5)	3.5 (0.2)	
Pruritus	3.3 (0.3)	1.6 (0.1)	
Urinary system disorders			
Urinary tract infection	3.1 (0)	3.5 (0.1)	

No additional clinically relevant events to those observed in CAPRIE with a frequency \$2.5%, have been reported during the CURE and CLARITY controlled studies. COMMIT collected only limited salety data.

Other adverse experiences of potential importance occurring in 1% to 2.5% of patients receiving PLAVIX (clopidogrel bisulfate) in the controlled clinical trials are listed below regardless of relationship to PLAVIX. In general, the incidence of these events was validate to that in patients receiving aspirin (in CAPRIE) or placebo + aspirin (in the other clinical trials).

hat in patients receiving aspirin (in CAPRIE) or placebo + aspirin (in the other clinical s).

Intomic Nervous System Disorders: Syncope, Palpitation. Body as a Whole-general roders: Asthenia, Fever, Hernia. Cardiovascular disorders: Cardiac failure. Central and pipheral nervous system disorders: Cardiac failure. Central and pipheral nervous system disorders: Constipation. Vomiting, Heart rate and rhythmoders: Fibrillation atrial. Liver and biliary system disorders: Interpatic enzymes increased. abolic and nutritional disorders: Sout, hyperuricemia, non-protein nitrogen (NPN) easeel. Musculo-skeletal system disorders: Arthriis, Arthrosis. Platelet, bleeding & ting disorders: Get Benorthage, hematoma, platelets decreased. Psychiatric disorders: very Intomina. Red blood cell disorders: Amenia. Respiratory system disorders: unnonia, Sinusitis. Skin and appendage disorders: Eczema, Skin ulceration. Unnary em disorders: Statist. Kysion disorders: Catarad, Conjunctivitis.

her potentially serious adverse events which may be of clinical interes but were rarely rotted (<1%) in patients who received PLAVIX in the controlled clinical trials are listed ow regardless of relationship to PLAVIX. In general, the incidence of these events was liat to that in patients vereveing aspirin (in APRIE) or placebo + aspirin (in the other ical trials).

perencie:

Body as a whole:
-hypersensitivity reactions, anaphylactoid reactions, serum sickness
-central and Peripheral Nervous System disorders:
-confusion, hallucinations, taste disorders
-tendrato hilary disorders:
-abnormal liver function test, hepatitis (non-infectious), acute liver failure
Platelet, Bleeding and Cotting disorders:
-cases of bleeding with fatal outcome (especially intracranial, gastrointestinal and
-tertoperitioneal hemorrhage)
-thrombolic thrombocytopenic purpura (TTP) — some cases with fatal outcome —
-(see WARNING)

OOSAGE AND ADMINISTRATION

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