AstraZeneca

STUDY REPORT SUMMARY

ASTRAZENECA PHARMACEUTICALS

FINISHED PRODUCT: N/A
ACTIVE INGREDIENT: N/A

Study No: NIS-CKR-DUM-2008/1
Retrospective treatment pattern survey for the patients with hypertension and stroke(SAPPHIRE)

Developmental phase: Marketed

Study Completion Date: 2008-07-18

Date of Report: 2009-07-10

OBJECTIVES:

Primary objective

The treatment rate and BP control rate in hypertension patients recovering from stroke during the follow-up periods

Secondary objectives

Survey on the pattern and disposition about treatment drug in hypertension patients recovering from stroke

Investigation on BP lowering effect and prescribed antihypertensive medications (including switch or addition of medications) in treating hypertension patients recovering from stroke

METHODS:

This non-interventional observation study protocol was reviewed in accordance with the standard procedures of AstraZeneca. This clinical study will collect basic clinical data on patients in order to assess attainment rate to target blood pressure and to find affecting factors in hypertension patients experiencing stroke.

This study will keep a record of the following data on patients selected through medical record review. (Record in e-CRFs.)

Patient Enrollment: Patients who received drug treatment for the control of blood pressure at discharge, among patients hospitalized for less than 7 days in one of the participating centers due to acute phase stroke from January through July 2006 (6 months)

In compliance with inclusion/exclusion criteria, patients will be enrolled in consecutive order and the investigator may enroll up to 50 patients.

RESULTS:

Baseline information

Demographics

Demographics is summarized in table 1.

As a result of survey on gender, 599 subjects (61.18%) were male, 380 subjects (32.82%) were female and the mean age was 65.61 ± 11.07 year-old. The most common age group was '70~79' win 322 subjects (32.89%) followed by the age of '60~69' (282 subjects, 28.80%), '50~59' (207 subjects, 21.14%), the age of '≥80' (84 subjects, 8.58%), the age of '40~49' (67 subjects, 6.84%) and the age of '20~39' (17 subjects, 1.74%). The average BMI was 24.00 ± 3.06 kg/m^2. The BMI of 310 subjects (31.66%) were <23.5 kg/m^2, which was the most frequent group followed by the group of 25 ~ 27.5 kg/m^2 in 167 subjects (17.06%), the group of 23.5~25 kg/m^2 in 141 subjects(14.40%), the group of ≥27.5 kg/m^2 in 83 subjects(8.48%).

Table 1. Baseline Characteristics

		No. of subjects
		N(%)
Gender	Male	599(61.18)
	Female	380(38.82)
Age	Mean ± SD (year)	65.61± 11.07
	Min-Max	23~93
	20 ~ 39	17(1.74)
	40 ~ 49	67(6.84)
	50 ~ 59	207(21.14)
	60 ~ 69	282(28.80)
	70 ~ 79	322(32.89)
	≥ 80	84(8.58)
BMI	Mean ± SD (Kg/m^2)	24.00± 3.06
	Min-Max	12.98~36.00
	NA	278(28.40)
	< 23.5 Kg/m^2	310(31.66)
	23.5~<25 Kg/m^2	141(14.40)
	25~27.5 Kg/m^2	167(17.06)
	≥ 27.5Kg/m^2	83(8.48)

Medical History

The result of TOAST classification and risk factors is summarized in table 2.

As a result of survey on TOAST classification, the most dominating group was with history of ischemic stroke in 807 subjects (82.43%) followed by TIA (Transients Ischemic Attack) in 140 subjects (14.30%) and hemorrhagic stroke in 32 subjects (3.27%). Among subjects with history of ischemic stoke, 285 subjects(29.11%) with SVO(Small Vessel Occlusion), which were the most, followed by 279 subjects(28.50%) with LAA(Large Artery Atherosclerosis), 119 subjects(12.16%) with SUE(Stroke of Undetermined etiology) and etc. All types of hemorrhagic stroke were ICH (intracerebral hemorrhage). .

As a result of survey on risk factors, the most common risk factor was Hypertension in 819 subjects(83.66%), followed by Diabetes mellitus(322 subjects, 32.89%), Antihypertensive therapy in 244 subjects(24.92%), Cigarette smoking in 266 subjects(23.08%), Hyperlipidemia in 173 subjects(17.67%), History of stoke (172 subjects, 17.57%). Atrial fibrillation in 74 subjects(7.56%), Angina or coronary insufficiency and Left ventricular hypertrophy in 33 subjects(3.37%), Congestive heart fail

ure in 18 subjects(1.84%), History of myocardial infarction in 16 subjects(1.63%) and Others in 14 subjects(1.43%).

Table 2. Medical history and Risk Factors

		No. of subjects N(%)
TOAST Classification	TIA (Transients Ischemic Attack)	140(14.30)
	Ichemic Stroke	807(82.43)
	LAA (Large Artery Atherosclerosis)	279(28.50)
	SVO (Small Vessel Occlusion)	285(29.11)
	CE (Cardioembolism)	98(10.01)
	SOE (Stroke of other determined etiology)	26(2.66)
	SUE (Stroke of Undetermined etiology)	119(12.16)
	Hemorrhagic Stroke	32(3.27)
	ICH (intracerebral hemorrhage)	32(3.27)
	IVH (intraventricular hemorrhage)	0(0.00)
	SAH (subarachnoid hemorrhage)	0(0.00)
	SDH (subdural hemorrhage)	0(0.00)
Risk Factor	History of Stroke	172(17.57)
	Hypertension	819(83.66)
	Antihypertensive therapy	244(24.92)
	Diabetes mellitus	322(32.89)
	Hyperlipidemia	173(17.67)
	Smokes cigarettes	226(23.08)
	Atrial fibrillation	74(7.56)
	History of myocardial infarction	16(1.63)
	Angina or coronary insufficiency	33(3.37)
	Congestive heart failure	18(1.84)
	LVH	33(3.37)
	Others	14(1.43)

Follow Up(Treatment) Duration

The analysis of follow up(treatment) duration is summarized in table 3.

The average follow up(treatment) duration was 34.44±4.33 days in total 945 subjects from visit1 to visit2 and 336.91±13.61 days in total 979 subjects from visit2 to visit3

Table 3. Follow Up(Treatment) Duration

	N	Mean±SD	Min	Max
From Visit1 to Visit2	945	34.44 ± 4.33	28	42
From Visit2 to Visit3	979	366.91 ± 13.61	334	396

†paired t-test

Medications

Anti-hypertensive medications

Out of 979 subjects, 876 subjects (89.48%) had administered anti-hypertensive medications before follow up (treatment). Among them, 179 subjects (18.28%) administered with CCB, 175 subjects (17.88%) with ARB Mono, 107 subjects (10.93%) with ACEI, 71 subjects (7.25%) with ARB Mono+CCB, etc. In follow up, among 907 subjects(92.65%) treated with anti-hypertensive medication,

the subjects with ARB Mono was predominant as 175 subjects(17.88%) and followed by 140 subjects(14.30%) with CCB, 93 subjects(9.50%) with ARB Mono+CCB, 87 subjects(8.89%) with ACEI, 78 subjects(7.97%) with ARB Combo and so on. Therefore the administration of CCB had declined relatively. The prescription of other anti-hypertensive medications such as ß-blocker, CCB+ACEI, Diuretics+CCB are described as below.

Concomitant Medication

The number of subjects with concomitant medication in visit1 was 930(94.99%) and the number of subjects in final visit was 931(35.10%) added 1 subject. As a result of the type of concomitant medication classified into visit1 and final visit, Aspirin was administered the most for 625 subjects (63.84%) at visit1 and 591 subjects (60.37%) at final visit and it was followed by Other Antiplatelet for 497 subjects (50.77%) and 495 subjects (50.56%), Statin for 393 subjects (40.14%) and 361 subjects (36.87%), Warfarin, Others, and Fibrate.

Assessment of treatment results

Change of Lipid Profile

As a result of Lipid profile analysis, the average LDL-C of 609 subjects had decreased dramatically by 15.14±78.88 mg/dL from 115.98±81.59 mg/dL at baseline to 100.83±81.59 mg/dL at follow up. The next largely decreased lipid profile was TC as average 12.89±41.66 mg/dL in 730 subjects from baseline average 178.93±42.67 mg/dL to follow up 166.04±39.23 mg/dL. TG had decreased by 11.45±88.94 mg/dL from baseline average 146.66±108.69 mg/dL to follow up 135.20±73.40 mg/dL in 645 subjects. HDL-C had increased by 1.67±9.47 mg/dL from average 43.74±12.05 mg/dL to 45.41±11.87 mg/dL. All the differences were statistically significant.

Change of Blood Pressure

The change of blood pressure is summarized in table 4 during survey.

The baseline of average systolic pressure was 137.31 ± 18.46 mmHg and average diastolic pressure was 82.23 ± 10.66 mmHg in 979 subjects. During follow up period, they had decreased by 7.19 ± 19.73 mmHg and 5.27 ± 12.31 mmHg respectively, as mean systolic pressure 130.12 ± 13.58 mmHg and mean diastolic pressure 76.96 ± 9.72 mmHg with statistical significance.

Table 4. Change of Blood Pressure

	N	Baseline	Follow Up	Difference	p-value†
		Mean±SD(mmHg)	Mean±SD(mmHg)	Mean±SD(mmHg)	
SBP	979	137.31 ± 18.46	130.12 ± 13.58	-7.19 ± 19.73	<.0001
DBP	979	82.23 ± 10.66	76.96 ± 9.72	-5.27 ± 12.31	<.0001

†paired t-test

Rate of Reach to Target BP

The rate of reach to target BP is summarized in table 5.

Among 979 subjects, 716 subjects had reached to target BP(140/90mmHg). Therefore the rate of reach to target BP was 73.14%(95% CI 70.36~75.92). In case of that target BP was 130/80mmHg, 325 subjects reached to target BP, so the rate of reach to target BP was 33.20%(95% CI : 30.25~36.15).

Table 5. Rate of Reach to Target BP

	Reach(+)	[95% CI]		Reach(-)
	N(%)	lower	upper	N(%)
Target (140/90)	716(73.14)	70.36	75.92	263(26.86)
Target (130/80)	325(33.20)	30.25	36.15	654(66.80)

Subgroup Analysis (Target 140/90)

As a result of the rate of reach to target BP classified into gender, age, BMI and TOAST classification, 74.74% on female were slightly higher than 72.12% on male. Age group of ≥ 80 years old was 76.19%, age group of 60~69 years old was 74.82% and all groups of age were surveyed around 70%. In case of BMI, 76.05% of subjects was in BMI 25~27.5 Kg/m^2 and 72.29% in BMI>27.5 Kg/m^2. The analysis by TOAST classification showed 74.29% of transient ischemic attack(TIA), 73.11% of Ischemic Stroke and 68.75% of Hemorrhagic Stroke without statistical significance.

Subgroup Analysis (Target 130/80)

As a result of the rate of reach to target BP classified into gender, age, BMI and TOAST classification, 35.53% on female showed slightly higher than 31.72% on male. The groups of age were ordered by 36.52% in the age of 60~69, 32.85% in the age of 50~59, 32.84% in the age of 40~49, etc. The age group of 20~39 showed the lowest proportion as 17.65%. In case of BMI, the group of 25~27.5Kg/m^2 was 37.13% and the group of BMI < 23.5 Kg/m^2 was 33.55% respectively. In the analysis of TOAST classification, it revealed 40.71% with Transient Ischemic Attack (TIA), 33.22% with Ischemic Stroke and 25.00% with Hemorrhagic Stroke respectively without statistical significance.