POPULATION IMPACT OF LOSARTAN USE IN FRANCE

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INTRODUCTION
The crude annual incidence of first stroke in France is of 138 per 100,000 population. The number of first strokes in France is then of 85,000 per year, the total number of incident or recurrent strokes in 120,000 per year (1).

The LIFE Study
In a randomized, multicenter, clinical trial (2) including 9193 patients, atenolol, a beta-blocker, was compared to losartan, an angiotensin II receptor antagonist, among hypertensive patients aged 55-80 years with electrocardiogram diagnosed (ECG) left ventricular hypertrophy (LVH). Patients were randomly assigned to losartan or atenolol-based regimes in order to reach a target blood pressure of less than 140/90 mmHg and were followed for a mean duration of 4.8 years. The primary endpoint was a composite of endpoint of cardiovascular death, myocardial infarction, and stroke. The relative risk (RR) was of 0.87 (p = 0.021) in favor of losartan, despite comparable degrees of blood pressure control. Regarding specifically fatal and non-fatal stroke, there was a 24.9% relative risk reduction in favor of losartan (p = 0.001).

OBJECTIVES
To estimate the number of patients in France meeting the LIFE inclusion criteria.
To estimate the impact of a losartan-based therapy on the cumulative incidence of first stroke.

METHODS

Patients
The selection criteria used in the model are not in exact match with those of the LIFE trial, since no epidemiological information was available for some of these, but they remain consistent of the ones available for a physician in daily practice. Table 1 summarizes the inclusion criteria used in this model and in the LIFE clinical trial.

Data sources
The National Institute of Statistics and Economic Studies (INSEE) provides population tables based on the 1999 census and projected to the year of 2004. The French subset of the MONICA project (3) reports blood pressure measured in the period of 1994/1997 in three reporting units in Lille, Strasbourg and Toulouse for the population aged 35-64 years. The Thiers permanent epidemiological observation allows the estimation of the broad patterns of prescriptions in France. The prevalence of left ventricular hypertrophy is a pilot study conducted in Scandinavia (4) and the incidence of stroke in the LIFE study (5) were applied to the model.

RESULTS

Hypertension prevalence
Figure 1 gives the results of the linear estimation of hypertension prevalence for the age classes that were not measured in the MONICA study. The same was done to estimate the proportion of treated patients, using a logistic trend.

French patients eligible for a losartan-based therapy
The French population aged 55-80 years is of 13.6 million. 6.7 million of these are hypertensive. 0.4 million of hypertensive patients are identified as having heart failure or angina pectoris. Among the remaining 6.3 million patients, 22% are considered to have an ECG-diagnosed LVH. 0.3 million of these 1.4 million patients are expected to be currently untreated. Figure 2 summarizes this repartition.

Cumulative number of strokes avoided in the next 5.5 years
Applying the cumulative stroke incidence reported in the LIFE trial (5) to the estimated 1.4 million LIFE-like patients, the estimated number of strokes during the next 5.5 years using an atenolol-based treatment is of 90,147. Using a losartan-based strategy, this figure decreases to 67,957. In comparison with atenolol base-line, 22,190 strokes would therefore be avoided.

CONCLUSIONS
The stroke incidence reduction using a losartan-based regimen instead of an atenolol-based therapy should be viewed as representing an incremental improvement relative to the benefit of conventional antihypertensive therapies: beta-blockers and diuretics. A nationwide prevention program using losartan in the treatment of hypertensive patients with left ventricular hypertrophy has the potential to have a major public health impact in France, as a consequence of the reduction in stroke incidence.

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