OBJECTIVE: In the European Lacidipine Study on Atherosclerosis (ELSA), against a similar antihypertensive effect, a significantly greater effect of lacidipine was found on carotid intima-media thickness (IMT) progression, indicating a specific anti-atherosclerotic effect of lacidipine. However, not only the extent but also the composition of an atherosclerotic plaque is a determinant of subsequent events. DESIGN AND METHODS: Among the 2334 patients enrolled in ELSA, 420 with 4-year treatment were chosen, videodensitometric analysis of their ultrasound carotid scan was performed and the maximum wall lesion (Tmax) was classified as lipidic, fibrolipidic and fibrotic by means of software previously validated against histology. Of the 420 patients, 244 had scans suitable for videodensitometry. RESULTS: Excellent reproducibility of videodensitometry analysis was found using the Bland-Altman and other methods. At baseline, ELSA hypertensive patients had predominantly fibrolipidic walls (70%), with an echoreflectivity indicating a mean collagen content of 25%. After 4 years of antihypertensive treatment, little change in the frequency distribution of carotid lesions (fibrolipidic 73%) was found, with no significant differences between patients randomized to lacidipine or atenolol. CONCLUSIONS: Our study provides previously unavailable information that carotid wall
composition changes to an extremely small extent during 4-year effective blood pressure lowering. With lacidipine, stable composition is associated with a lower IMT progression than with atenolol.