

MRI-FINDINGS IN HYPOXIC COMA

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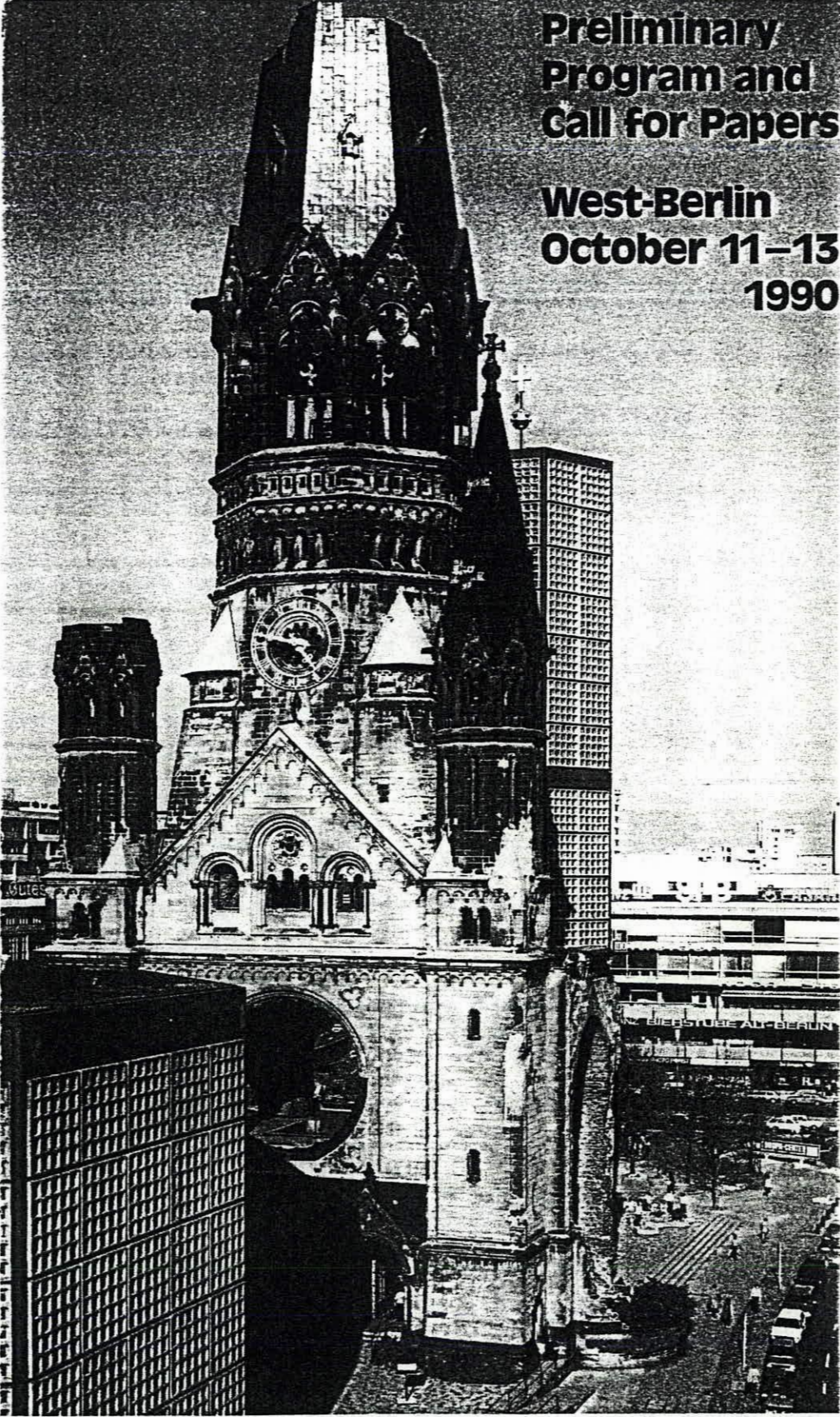
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Magnetic resonance imaging (MRI) has already proved to be superior in detection of lesions in cases of acute and chronic ischemic infarction. However, up to now there are only few neuroradiological studies about the distribution of lesions in acute and chronic hypoxia.

Between February 1989 and May 1990 we examined a total number of 24 patients suffering from hypoxic coma following drowning accident (4), CO poisoning (2), inhalation of inert gases (2), higher altitude brain edema (1), cardiac arrest (4), hanging (2), anaphylactic shock (1), hypoglycemia (1), septicemia shock (1), drug intoxication (2) and anesthesia accident (2). All examinations were performed on a 1.5 Tesla Magnetom (Siemens) using a circular polarized head coil with a field of view (FOV) from 21 to 25 cm.

The examination protocol consisted of sagittal and axial T1 weighted images (TR = 550/TE = 50) as well as proton density and T2 weighted spin echo images (2400/40/90). All patients had to be examined under observation of their vital functions (blood pressure control, ECG, pulsoxymetry and capnography). 9 patients were investigated under general anesthesia. In order to delineate a distinct territory of lesion 8 main regions related to etiology were defined: cortical border zone, deep white matter, basal ganglia, thalamus, temporal lobe, brainstem, cerebellum and corpus callosum.

MR-examination in all patients revealed multiple, symmetrical and bilateral focal damages. Based on signal behaviour edema, ischemia and hemorrhage could be differentiated from cyst, gliosis and necrosis. MR proved to be more sensitive in detection of the lesions compared to CT, as well as the specificity based on signal behaviour allowed a differentiation of acute and chronic alterations. Based on serial MR-studies prediction of prognostic outcome will be improved.



**Preliminary
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