# Acute Headache of Recent Onset and Subarachnoid Hemorrhage: A Prospective Study

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SYNOPSIS

**Twenty-seven patients with acute severe headache of recent onset were prospectively recruited in the Emergency Room. Mean duration of headache was 61 hours. CT scan disclosed subarachnoid bleeding in 4 patients and spinal tap revealed subarachnoid hemorrhage (SAH) in 5 patients with normal CT scan. In most SAH cases pain was bilateral, very intense and involving the occipital region. Four of these patients had doubtful or no nuchal rigidity and in one, pain improved while in the Emergency Room.**

**In every case with an intense acute severe headache of recent onset CT scan and (if normal) a lumbar puncture are warranted to help rule out a SAH.**

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## INTRODUCTION

Headache is a common complaint in Emergency Departments, but only a small percentage of patients have a serious disease.[1,2] Nevertheless, some particular forms of headache, usually headaches of recent onset, require special attention from the physician.

Management of headache of recent onset is still a medical controversy. Some retrospective studies state that a number of patients with ruptured intracranial aneurysms had severe "warning" or "sentinel" headache episodes some days before the hemorrhage.[3-8] This observation was made after questioning patients with subarachnoid hemorrhage (SAH),[4,6] or after reviewing medical records of patients with major subarachnoid bleeding.[3,5,7,8] Based on these experiences many authors suggest that one should be aware of headaches of acute onset, examine them very cautiously and even perform a cerebral angiogram in selected instances.[3] On the other hand there are those who consider that most acute headaches of recent onset (AHRO) are not associated with a significant risk of future subarachnoid bleeding.[9,10] Finally, there are also different explanations for the mechanism of these so-called "warning" headaches.[4,10,11]

To analyze prospectively the relationship between AHRO and SAH we performed the following study.

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## PATIENTS AND METHODS

The study was done in a general hospital. Of all the patients attending the Emergency Room during one year, those complying with the following criteria were admitted to the study. Inclusion criteria were: acute headache of sudden onset, severe pain, no previous similar headaches, no obvious cause for the headache, and no overt focal symptoms nor focal signs on neurological exam.

All patients were initially examined by a neurologist. Immediate evaluation included a blood and coagulation screen, a CT scan (GE 9800) and, if CT scan was normal, lumbar puncture was performed. The following data were analyzed: age, sex, delay between beginning of symptoms and arrival at the hospital, precipitating factors, headache features, associated symptoms, previous headaches or diseases, blood pressure and temperature, neurological examination, CT results and cerebrospinal fluid features (SAH being considered when there was xanthochromia with less than 100 mg/dL protein or blood-stained CSF unchanged on three sequential samples together with a xanthochromic supernatant after centrifugation).

Patients with a diagnosis different from acute headache of unknown origin were admitted to the hospital. Those with a normal neurological examination, normal CT and lumbar puncture were followed for three months. Three patients initially recruited were eventually excluded because of the suspicion of a traumatic tap.

## RESULTS

Twenty-seven patients entered the study (15 men and 12 women). The age range was 24-77 years (mean, 47.7, sd, 12.2). The delay between beginning of symptoms and arrival at the hospital was of 61 hours (sd, 74.9, range 1 hour-13 days. Mean delay in SAH cases was 72 hours). The headache started abruptly in 20 patients and subacutely (increasing to its maximal intensity in few hours) in 7. Headache was bilateral in all but one case (of unknown cause) and throbbing in two cases (one