Cannabis-related stroke

**Strasbourg, France** - Cannabis-related stroke is not a myth, and cannabis use should be considered a risk factor for inducing ischemic stroke, a new literature review concludes [[**1**](http://www.theheart.org/article/1498023.do#bib_1)].

The review, published in the February 2013 issue of *Stroke*, was conducted by a team led by **Dr Valérie Wolff** (University Hospital of Strasbourg, France). Other recent research has linked marijuana use to risk of angina and ACS and to an increased risk of MI in younger adults.

Wolff commented that as most cannabis smokers are young, patients under 45 years of age presenting with symptoms of stroke should be asked about cannabis use and their urine tested for cannabinoids.

"It is important to establish if cannabis has been the cause, as they can reduce their risk of a subsequent stroke if they stop using the drug," she said.

**The tip of the iceberg**

The authors note that 59 case reports of cannabis-related stroke (mean age 33 years) have been described. The majority were men, with a male-to-female ratio of 4.9:1. Of the 59 cases, 49 were classed as ischemic strokes, five were transient ischemic attacks, one was a hemorrhagic stroke, and, in four patients, a diagnosis of stroke was suspected but not confirmed because there was no neuroimaging.

They add that in many cases the strokes appeared to have occurred while the drug was actually being smoked or within half an hour of smoking, which is in accordance with another study showing that cannabis increases MI 4.8-fold during the hour following intake.

Wolff said that although there are only these few cases of documented stroke associated with cannabis use, this is probably just the tip of the iceberg. "Nobody is looking for it, and if you don't look you won't find it. Neurologists are not thinking about cannabis as a possible cause of stroke, so they don't ask patients about it."

The authors caution that the reality of the relationship between cannabis and stroke is, however, complex, because other confounding factors have to be considered. These include potential triggering factors of sexual activity or concomitant alcohol consumption. There may also be genetic predisposition to susceptibility to stroke from cannabis use, but this needs more study.

Wolff estimates that less than 10% of strokes occur in patients under 45 years of age. These strokes are generally caused by cardioembolism or cervical arterial dissection. Around 30% to 60% of strokes in this age group are considered cryptogenic, with no established cause. But in many of these cases, the best diagnostic procedures may not have been performed, she said.

In a previous study conducted by Wolff and colleagues, in which they examined vessels in the brain very closely, they found that just 12% of strokes could be classed as cryptogenic. Of these, about 30% may have been caused by cannabis use. "So it is not an insignificant number," she noted.

**Mechanism: Multifocal intracerebral stenosis**

In terms of mechanism, Wolff said cannabis appears to be associated with multifocal intracerebral stenosis, which can cause a stroke. "We have seen these stenoses in people who are regular cannabis smokers, and when they stop smoking the stenoses disappear. How cannabis causes the stenosis, we do not know. This needs to be studied," she said.

"The stenoses are caused by shrinkage of the blood vessels and can occur in several different areas of the brain. It appears that cannabis may cause the arteries to constrict. These stenoses can be difficult to see. They can be detected with magnetic resonance angiography, but careful scrutiny of the vessels is required. Many are missed," Wolff added.

"In light of this review, cannabis has to be considered as harmful and the cerebrovascular risk when cannabis is consumed is probably underestimated," the authors conclude.

To confirm the link, they call for an epidemiological study to determine the incidence of multifocal intracerebral stenosis, complicated or not by stroke, in the general population and cannabis users.

To confirm the diagnosis, it is necessary to perform magnetic resonance angiography in the acute stage of stroke to search for intracranial stenosis, explained the authors. Thereafter, control vascular imaging is important to evaluate the reversibility of vascular abnormalities. However, when there is doubt between stenosis and arterial artifacts, conventional angiography with three-dimensional reconstructed images is needed to confirm diagnosis of stenosis, they added.

|  |
| --- |
| *The authors declare they have no conflicts of interest.* |

|  |
| --- |
| The complete contents of Medscape Medical News, a professional news service of WebMD, can be found at [**www.medscape.com**](http://www.theheart.org/viewDocument.do?document=http%3A%2F%2Fwww.medscape.com%2F), a website for medical professionals. |