



脑微出血的诊治



脑微出血的诊断

脑微出血：定义

脑微出血(**cerebral microbleeds, CMBs** , 或**MBs**)

是脑内微小血管病变所致、以微量出血为主要特征的一种脑实质损害。

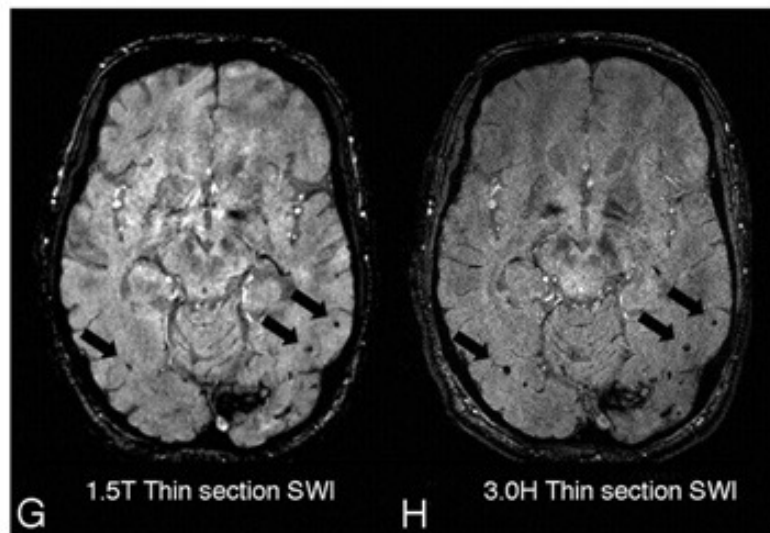
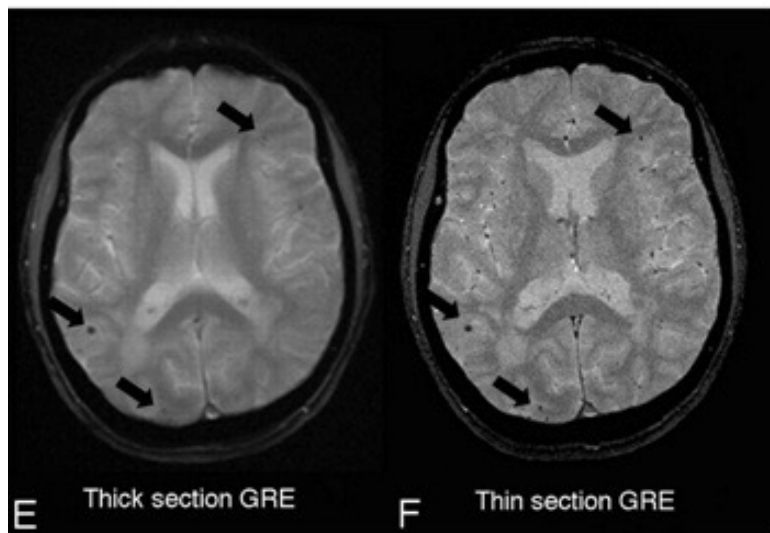
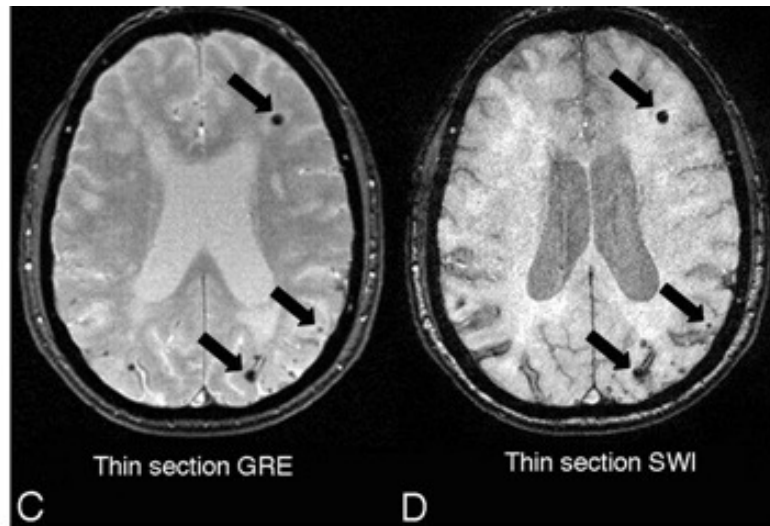
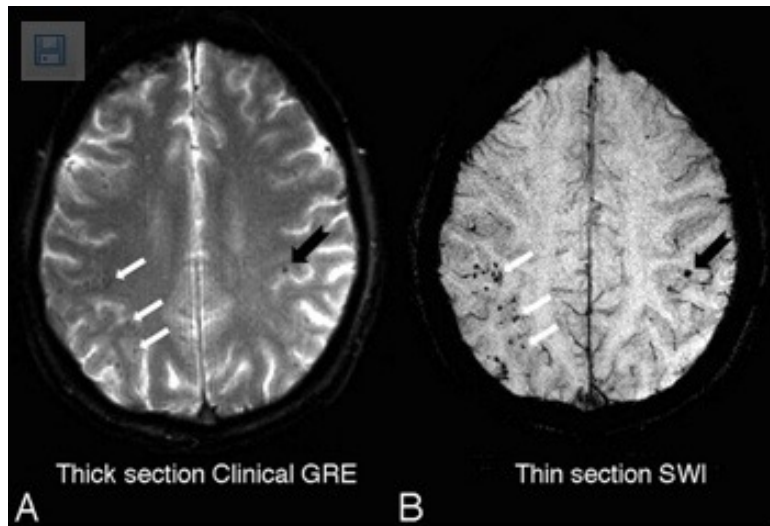
局限在脑叶的微出血与脑淀粉样血管病相关。



脑微出血的诊断

影像学表现

- 磁共振新技术**GRE-T2*WI**或**SWI**对微小出血后的残余痕迹（含铁血黄素的沉积）敏感性很高；表现为均匀一致的**2-5mm**的卵圆形低信号或信号缺失，病灶周边无水肿。





各种类似微出血表现的脑部结构

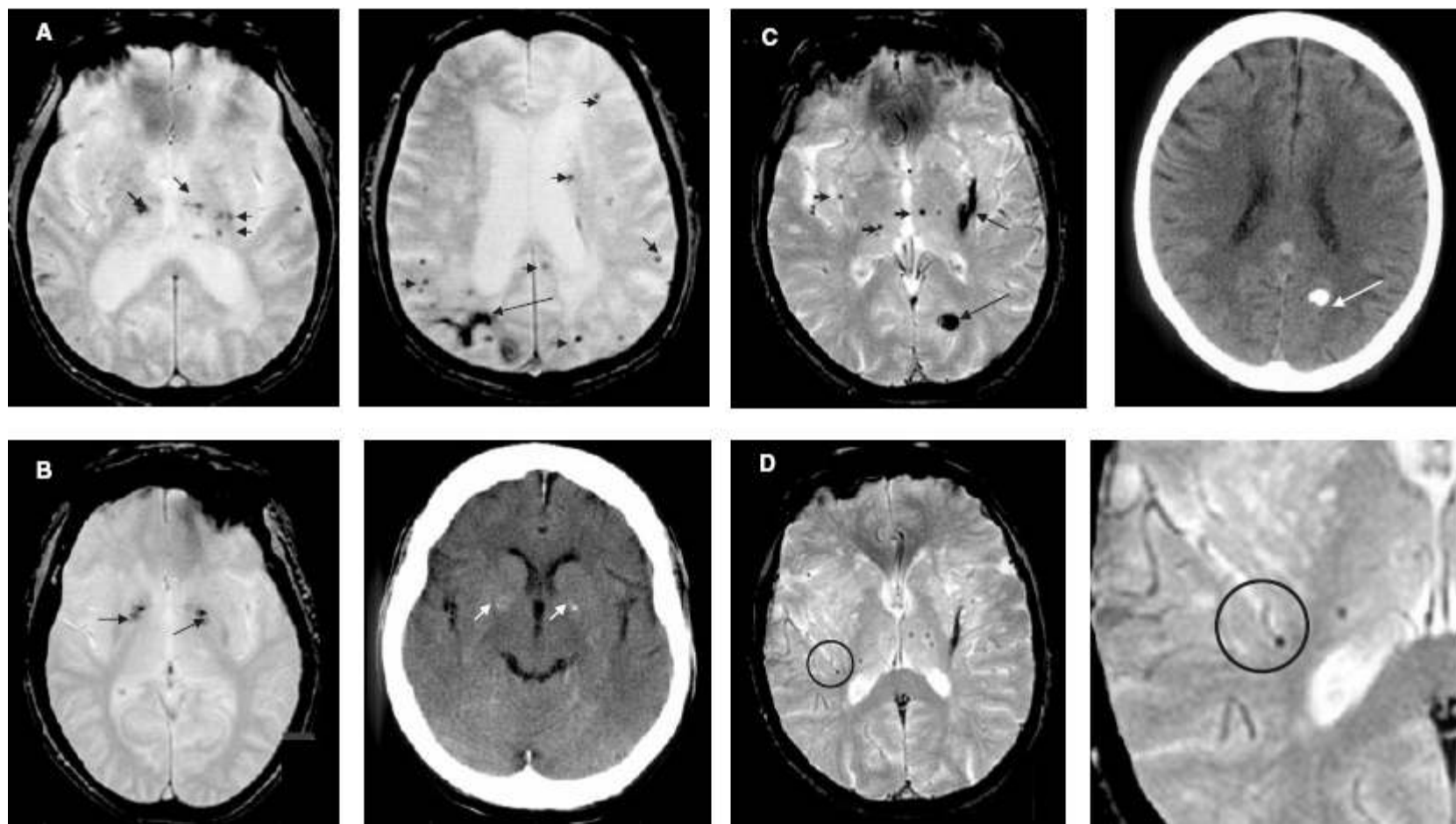


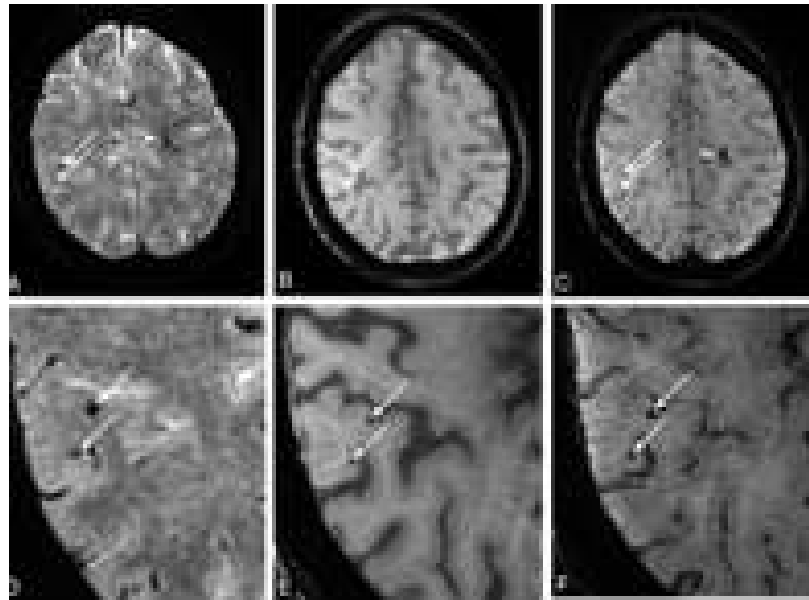
Fig. 1 Illustrative imaging of BMBs and their mimics. MRI parameters: 1.5 teslas, T_2^* -GRE, TE 15 ms, TR 625 ms, two excitations, flip angle 20° , FOV 240 mm, slice thickness 5 mm, slice gap 1 mm, matrix 256×192 . (A) BMBs (short arrows). Note also the old intracerebral haemorrhage in the right occipital region (long arrow). Not all BMBs are marked as they are too numerous. (B) Basal ganglia calcification (arrows) on MRI (left) and CT (right). (C) Calcification (long arrow) mimicking a BMB on MRI (left), CT (right). Also true BMBs (arrowheads) and old intracerebral haemorrhage (short arrow). (D) Flow void mimicking a BMB (left, circled), enlarged on right. Note the vessel in a sulcus leading up to the black dot indicating that it is a vessel flow void in cross section.



好发部位

脑微出血的诊断

皮质、皮质下白质、基底节及丘脑、脑干、小脑*

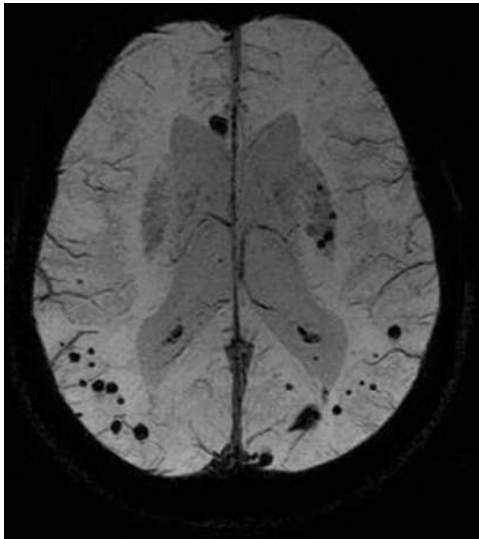


* Roob G, Lechner A, Schmidt R, et al. Frequency and location of microbleeds in patients with primary intracerebral hemorrhage. Stroke, 2000, 31(11):2665-2669.



脑微出血的病因及危险因素

年龄



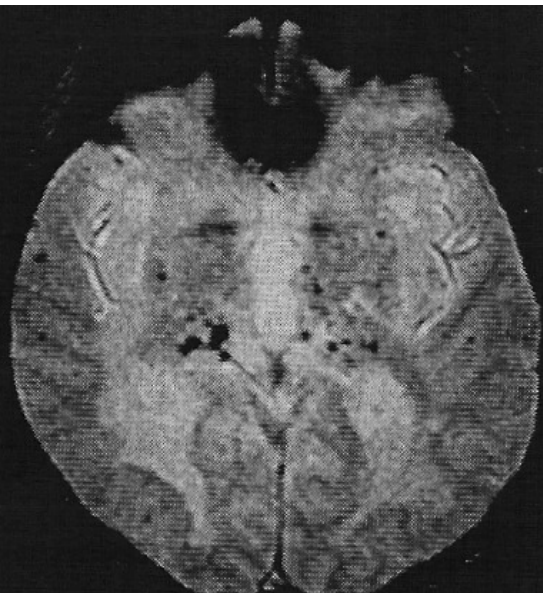
- 既往无脑血管病史的老年人中，大于75岁被认为是MBs的独立危险因素。*

*Jeong SW, Jung KH, Chu K, et al. Clinical and radiologic differences between primary intracerebral hemorrhage with and without microbleeds on gradient-echo magnetic resonance images, Arch Neurol, 2004, 61(6):905-910.



脑微出血的病因及危险因素

高血压



- MBs为慢性高血压患者脑内靶器官损伤的一种类型*。
- 慢性高血压造成脑内小动脉玻璃样变，易发生血管破裂导致MBs。



脑微出血的病因及危险因素

脑白质病变

- 影像学上称白质疏松*1
- 常与MBs共存，严重程度与MBs关系密切，但并不是MBs的独立危险因素*2

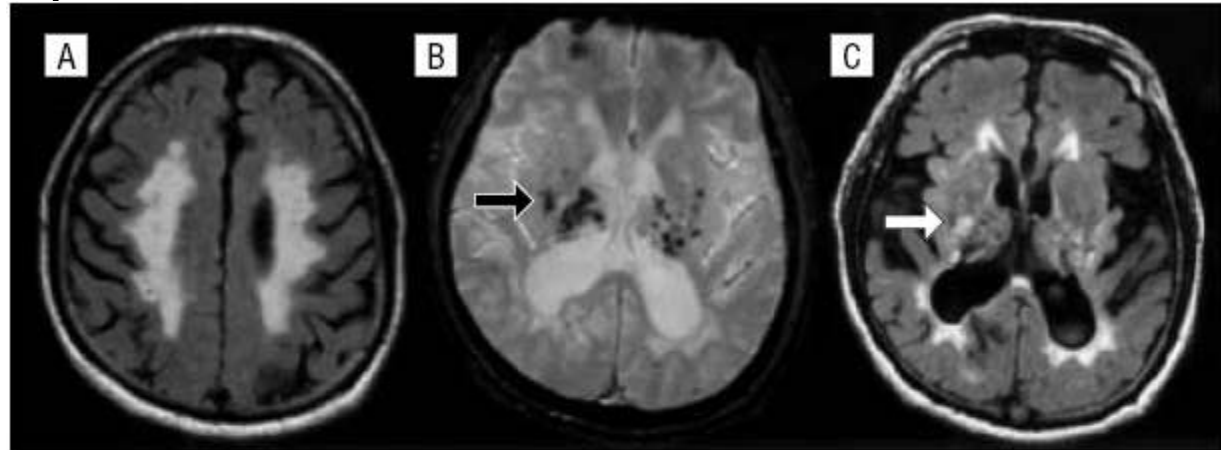


Figure 1. A 69-year-old woman with hypertension had advanced leukoariosis (A) and numerous multifocal signal loss lesions (black arrow) (B); an acute ischemic lesion of internal capsule (C, white arrow) developed, which is found to overlap with the nearby multifocal signal loss lesions (black arrow, part B).

*1脑白质疏松为一个影像学概念，其在头颅CT上表现为两侧大脑皮质下、侧脑室周围、半卵圆中心区斑片状或弥散状相互融合的低密度灶，在脑MRI的T1加权像上显示等信号或低信号，在T2加权像、FLAIR上为高信号。病变部位与形态与脑CT相似。

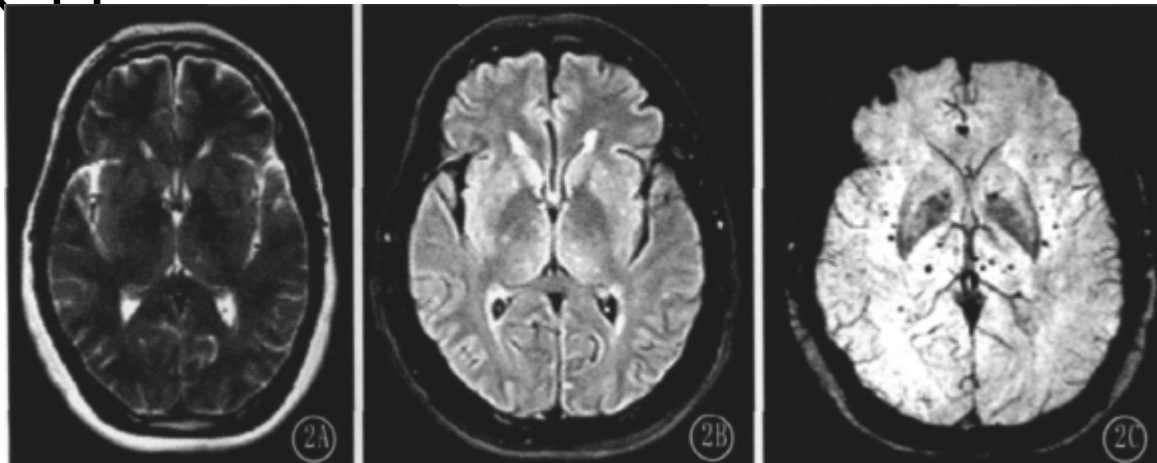
*2Kim DE,Bae HJ, Lee SH, et al.Gradient echo magnetic resonance imaging in the prediction of hemorrhagic ischemic stroke:a need for the consideration of the extent of leukoariosis.Arch Neurol,2002,59(3):425-429.



脑微出血的病因及危险因素

腔隙性脑梗塞

- MBs的发生率及数目与腔隙性脑梗塞有一定相关性*

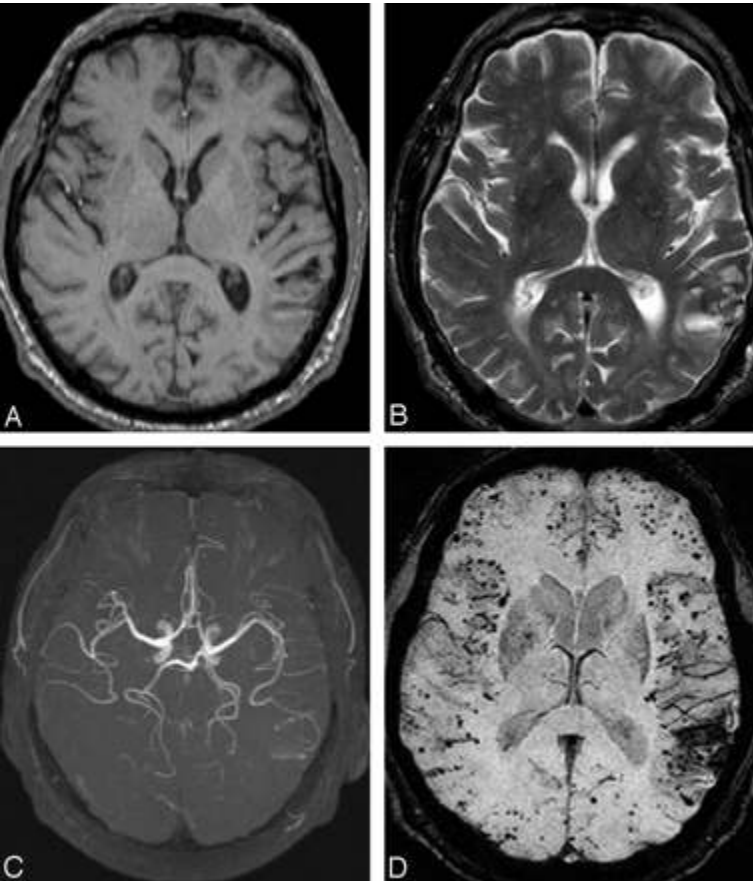


*Lee SH, Bae HJ, Kwon SJ, et al. Cerebral microbleeds are regionally associated with intracerebral hemorrhage. *Neurology*, 2004, 62(1):72-76.



脑微出血的病因及危险因素

脑淀粉样血管病



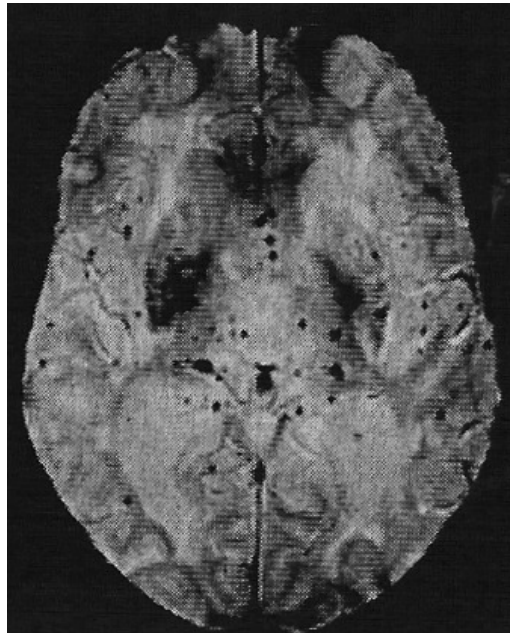
- 可能与发生在皮层和皮层下连接处的MBs有关，两者均累及皮层和小至中等大小的软脑膜血管。*

*Greenberg SM,Eng JA,Ning M,et al.Hemorrhage burden predicts recurrent intracerebral hemorrhage after lobar hemorrhage.Stroke,2004,35(6):1415-1420.



脑微出血的病因及危险因素

胆固醇

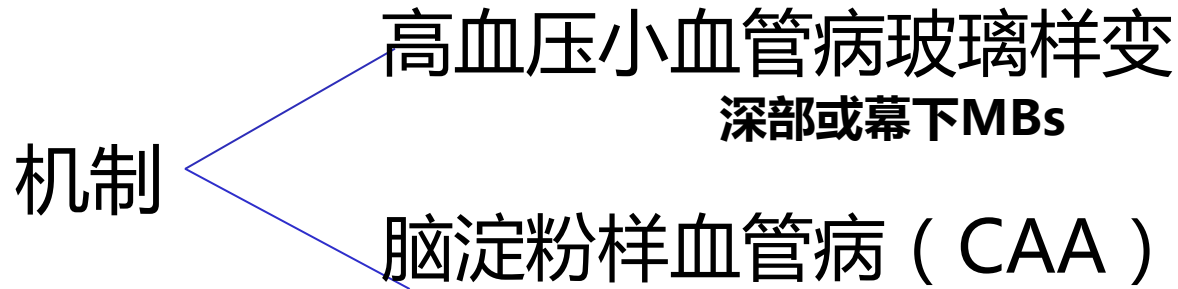


- MBs数量和胆固醇含量呈独立负相关。MBs与较低血清总胆固醇水平和较高高密度脂蛋白水平显著相关。*

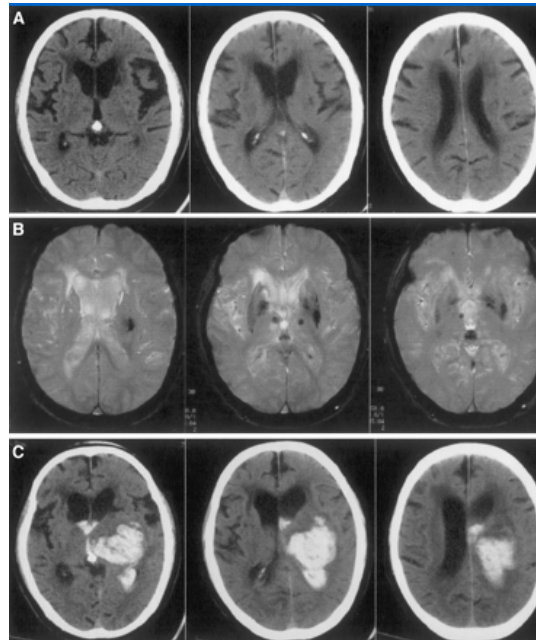
*Lee SH,Bae HJ,Yoon BW,et al. Low concentration of serum total cholesterol is associated with multifocal signal loss lesions on gradient-echo magnetic resonance imaging analysis of risk factors for multifocal signal loss lesions.Stroke, 2002,33(12):2845-2849.



脑微出血的机制



严格的脑叶MBs





MBs在健康人群和脑卒中患者中的发生率是多少？

doi:10.1093/brain/awl387

Brain (2007), 130, 1988–2003

REVIEW ARTICLE

Spontaneous brain microbleeds: systematic review, subgroup analyses and standards for study design and reporting

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不同人群MBs的发生率

Group	n/N	Prevalence % (95%CI)
<u>Healthy adults</u>		
All studies	70/1411	5.0 (3.9–6.2)
<u>Ischaemic stroke</u>		
First-ever	53/231	22.9 (18.0–28.8)
Prior stroke	41/94	43.6 (34.0–53.7)
Not distinguished	266/750	35.5 (32.1–39.0)
All studies	360/1075	33.5 (30.7–36.4)
<u>Non-traumatic intracerebral haemorrhage</u>		
First-ever	246/475	51.8 (47.3–56.0)
Prior stroke	47/57	82.5 (70.6–90.2)
Not distinguished	247/362	68.2 (63.3–72.8)
All studies	540/894	60.4 (57.2–63.6)
<u>Ischaemic and haemorrhagic stroke (mixed)</u>		
First-ever	65/117	55.6 (46.5–64.2)
Prior stroke	33/47	70.2 (56.0–81.3)
Not distinguished	229/556	41.2 (37.2–45.3)
All studies	327/720	45.4 (41.8–49.1)

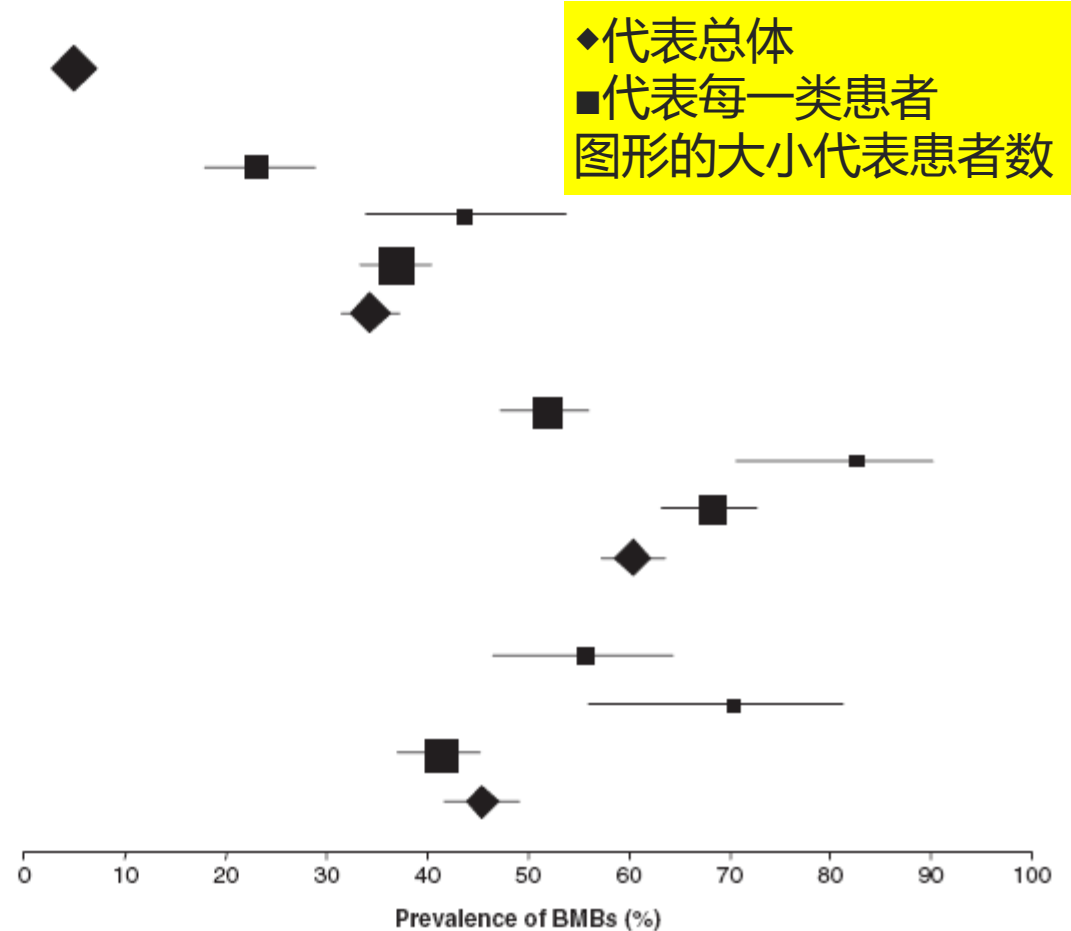


Fig. 2 The prevalence of BMBs in different groups of people. Point estimates are represented by boxes for individual disease categories and diamonds for summed disease categories. The area of each point estimate is proportional to the size of each study. The error bars represent 95% confidence intervals (95% CI). N = sample size, n = number of study participants with one BMB or more. Note data from each study only appear once.

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