

ONLINE SUPPLEMENT

Insular Ischemic Stroke: Clinical Presentation and Outcome

Table S1

Please see next page.

No	Author	Sex, age	Topo- graphy	Clinical findings	No	Author	Sex, age	Topo- graphy	Clinical findings
1	10	M 72	B1-2	Aphasia (Wernicke)	9	11	F 68	A3 B1-2 SIA	Right ataxic hemiparesis. Dysarthria Aphasia (non-fluent). Cardiovascular (T wave inversion)
2		F 77	A1-3 B1-2 FO	Left hemiparesis (FUL) Dysarthria	10	16	M 50	B1-2 SIA	Left hemibody hemiballismus. Pseudovestibular syndrome (dizziness). Syncope. Movement disorder (tongue dystonia, left facial "jerks")
3	6	F 73	B1-2 SIA TO	Pseudovestibular syndrome (dizziness, vertigo, unsteadiness)	11	8	M 59	B1-2	Left sensory (ULT, isolated thermal anesthesia)
4		M 69	B1-2 SIA	Right sensory (FUTL, all modalities incl. cortical). Pseudovestibular syndrome. Aphasia (fluent). Dysarthria, Gustatory (taste recognition)	12	13	F 78	A2-3 B1	Dysarthria. Auditory processing deficit (temporal resolution and sequencing)
5		F 48	B2 SIA PO	Right sensory (FUTL, all modalities, incl cortical). Aphasia (nonfluent). Dysarthria	13	9	M 64	B1-2 SIA	Sensory (right-sided thermal, pain and thermal pain) Aphasia (receptive)
6		F 75	A3 B1-2 TO	Left sensory (U, touch and pain, cortical) Pseudovestibular syndrome, Somatoparaphrenia, Cardiovascular (hypertension)	14	17	F 67	A3	Speech, oral and lingual apraxia
7	7	F 66	A1-3 B1-2 FO	Right-sided sensory (Touch and pain) Gustatory (Rotten melon taste), Hypersalivation.	15	12	F 59	A1-3 FO SIA	Right lower facial paresis. Aphasia (non-fluent: speech initiation deficit). Dysarthria, Right Babinski. Right brisk reflexes
8	15	M 64	A2 SIA	Pseudovestibular syndrome (dizziness, unsteadiness)	16	14	M 72	B1 SIA	Pure dysarthria

Table S1. Demographics, topography and clinical features of the 16 patients from the literature.

Legend: F: Facial; U: Upper limb; T: trunk; L: Lower limb; SIA: Subinsular area;
FO: Frontal operculum; PO: Parietal operculum; TO: Temporal operculum

Supplemental methods. Detailed description of the patients from our institutions.

Patient A. This 34 year-old right-handed woman, who smoked and took contraceptive pills, presented with headache, dizziness, a brief transient speech deficit, and sudden left arm and leg hypoesthesia. She had the impression that her left side was missing, and touching her left arm felt like touching someone else. She also had the impression of being “out of reality”. Neurological evaluation 12h after onset of symptoms revealed only mild deficits in vibration detection and proprioception. Head CT was normal but MRI performed two weeks later disclosed an ischemic infarct restricted to the right long posterior insular gyrus B2, slightly extending to the parietal operculum. Further investigations revealed a patent foramen ovale. At follow-up three weeks later, neurological and neuropsychological evaluations disclosed no deficit.

Patient B. This 71 year-old right-handed woman with a history of rheumatic fever and mitral valve stenosis presented right hemibody pinprick sensory deficit, right brachiofacial weakness, nonfluent dysphasia with several phonemic paraphasias and diminished comprehension. Sensory examination other than pain perception could not be assessed adequately due to the aphasia. Brain CT showed loss of grey-white matter differentiation in the posterior left insula, and EKG revealed atrial fibrillation. Repeat head CT 14h post-thrombolytic therapy disclosed a cerebral infarct restricted to the posterior left insular region. Upon discharge six days later, the patient presented only slight word-finding difficulties. An MRI performed seven months later confirmed that the infarct was restricted to the inferior part of the left long insular gyri B1 and B2, with minimal extension to the temporal operculum (Heschl's gyrus).

Patient C. This 32 year-old right-handed woman presented a transient episode characterized by sudden nonfluent aphasia (with phonemic paraphasias and spared comprehension), and inability to write. She also described being unable to drink from a glass because her lips would not move properly despite any evidence of facial weakness. Awkwardly, she reported that her symptoms nearly resolved as she started to cry four hours later. At admission, neurological examination was normal. A head CT revealed a left insular hypodensity and the brain MRI performed 30h after onset of symptoms confirmed an infarct involving the left short insular gyri A2 and A3 and the long posterior insular gyrus B1, bordering on the frontal and temporal opercula. Search for an etiology was unfruitful.

Patient D. This 53 year-old right-handed man who smoked and had a previous silent myocardial infarction presented a transient episode of isolated word-finding difficulties, with spared comprehension. The deficit lasted 3-4h. At admission the neurological examination was normal. A head CT scan demonstrated a left insular hypodensity with a dot sign in the M2 segment of the left MCA. An MRI performed 17 days later revealed an infarct involving the short insular gyri A3. A heart ultrasound demonstrated an anteroseptal and apical akinesia secondary to the previous myocardial infarct.

Patient E. This 40 year-old right-handed woman was referred to our emergency room because of sudden onset of fluctuating non-fluent aphasia (with good repetition and comprehension and few phonemic paraphasias) associated with right hand paresthesia and an unusual sweet taste in the mouth. She also had the impression of a foreign arm (somatoparaphrenia) without misoplegia or anosodiaphoria. Symptoms regressed over

the next 24 hours. Upon admission to the stroke unit, the patient had only a slight spinothalamic sensory deficit on the finger of the right hand. Taste was normal as was the rest of the neurological exam. An MRI showed an insular infarct involving the left long posterior insular gyrus B1 and B2 and the posterior part of the extreme capsule. Extensive search for an etiology was negative..

Patient F. A 49 year-old man presented with an acute right temporal headache followed by dysarthria and clumsiness of the left hand. He also reported non-rotatory dizziness which lasted less than 30 minutes. Upon admission to the stroke unit, he had a complete right Horner's syndrome, minimal dysarthria with drift of the left arm. NIHSS score was 3. MRI showed an acute stroke involving the right short insular gyrus (A3), the long insular gyri B1 and B2 and the extreme capsule, with minimal extension into the parietal and temporal opercula (including Heschl's gyrus) and the posterior part of corona radiata. MRA documented an internal carotid dissection. Within 24 hours, all symptoms had remitted.

Patient G. A 58 year-old man presented with dizziness, lightheadedness and palor. This was associated with dysarthria and dysesthesia of the face, arm and foot. The major symptoms lasted 30 minutes. Upon admission to the stroke unit, the patient had a very mild left hemibody hypoesthesia more predominant at the left hand. Taste was normal as was the rest of the neurological and neuropsychological examination. MRI showed an insular infarct involving exclusively the right insular long gyri B1 and B2. A distal occlusion of the M3 segment was found on MRI. The patient was known to have atrial fibrillation (untreated) suggesting a cardioembolic origin. The patient was completely asymptomatic after 24 hours.