

# Stroke

## Treatments and Prescribing Practices

### A Global Survey 2009

**A global survey of current treatments and prescribing practices for Ischaemic Stroke, Haemorrhagic Stroke and Transient Ischaemic Attack (TIA)**

**Focused on drug-based treatments, this report presents the findings of a comprehensive survey, from information provided by more than 230 clinics worldwide**

**In-depth feedback on Stroke treatment needs and limitations, from the clinician's perspective**

**Global data relevant to treatment practices, markets and opportunities**



## Overview

This report presents the findings of a global survey on current treatments and prescribing practices for Ischaemic Stroke, Haemorrhagic Stroke and Transient Ischaemic Attack (TIA). These findings were made following the participation of more than 230 clinics worldwide, which provided detailed information on their treatment practices.

- + Global quantitative data on treatments and drug prescribing practices for Ischaemic Stroke, Haemorrhagic Stroke and Transient Ischaemic Attack (TIA), provided by more than 230 clinics in 41 countries.
- + More than 98% of study participants are practicing physicians, working in areas of Stroke treatment. Of these, 65% are specialists in Stroke treatment. Leading participant countries were USA, Italy, India, Canada, Japan, Germany, Spain, Belgium and China.
- + More than 60% of the clinical centres participating in this study were hospital specialist Stroke units, specialist Stroke practices or private Stroke clinics.
- + Detailed information on drugs classes used in the treatment of patients with Ischaemic Stroke, Haemorrhagic Stroke and Transient Ischaemic Attack (TIA), together with population-based drug prescribing profiles.
- + Quantitative prescribing data on specific antiplatelet, anticoagulant, thrombolytic and other drugs used in the treatment of Ischaemic Stroke, Haemorrhagic Stroke and Transient Ischaemic Attack (TIA).
- + The percentage of Ischaemic Stroke patients prescribed the antiplatelets aspirin (e.g. Aspro®), dipyridamole (e.g. Persantine®), clopidogrel (e.g. Plavix®), aspirin/dipyridamol (e.g. Asasantin®), ticlopidine (e.g. Ticlid®) and others (specified).
- + The percentage of Ischaemic Stroke patients prescribed the coagulants warfarin (e.g. Coumadin®), heparin (e.g. Hepalean®), dicoumarol (e.g. Dicoumarol), antithrombin III (e.g. Thrombate III®), argatroban (e.g. Novastan®), bivalirudin (e.g. Angiomax®), sandoparin (e.g. Certoparin®), enoxaparin (e.g. Lovenox®), ethyl biscoumacetate (e.g. Tromexan®), nadroparin (e.g. Fraxiparine®) or others (specified).
- + The percentage of Ischaemic Stroke patients prescribed the thrombolytic drug Tissue Plasminogen Activator (e.g. Alteplase®) or others (specified).
- + The percentage of Haemorrhagic Stroke patients prescribed clotting factor (e.g. vitamin K), clotting proteins (e.g. prothrombin), calcium channel blockers (e.g. nimodipine), antihypertensives, platelets, plasma or other (specified).
- + Prescribing practices on the use of specific drug combinations, used in the treatment of Ischaemic and Haemorrhagic Stroke.
- + The percentage of Haemorrhagic Stroke patients treated surgically by aneurysm clipping, endovascular treatment of aneurysms, surgical arteriovenous malformation (AVM) removal, stereotactic radiosurgery, endovascular treatment of AVMs, removal of haematoma, ventriculostomy, carotid endarterectomy, craniotomy and others (specified).
- + In-depth information provided by physicians on current limitations in the diagnosis of stroke and current issues and challenges in the Stroke treatment.



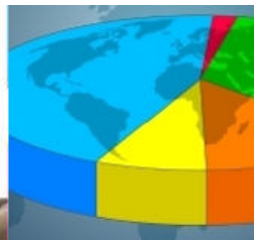
## Introduction

In 2008, the World Stroke Congress reported that 20 million Stroke events occur globally each year and account for 5.7 million deaths. Stroke is now the second most common cause of death worldwide and a major cause of disability. The incidence of Stroke is expected to increase by 30% over the next decade (6th World Stroke Congress, Vienna, Austria, 24th-27th September 2008).

In a field where therapies are often unsatisfactory, physicians seek to extend their understanding and use of available treatments to improve patient outcomes. Knowledge in these areas is also important to drug developers, who seek a better understanding of prescribing practices and treatment needs and limitations from the clinician's perspective, as part of their own efforts to develop more effective therapies. To meet interest in these areas, a global survey on current treatments and drug prescribing practices for Stroke, has been conducted. This survey involved the participation of more than 230 clinical centres in 41 countries.

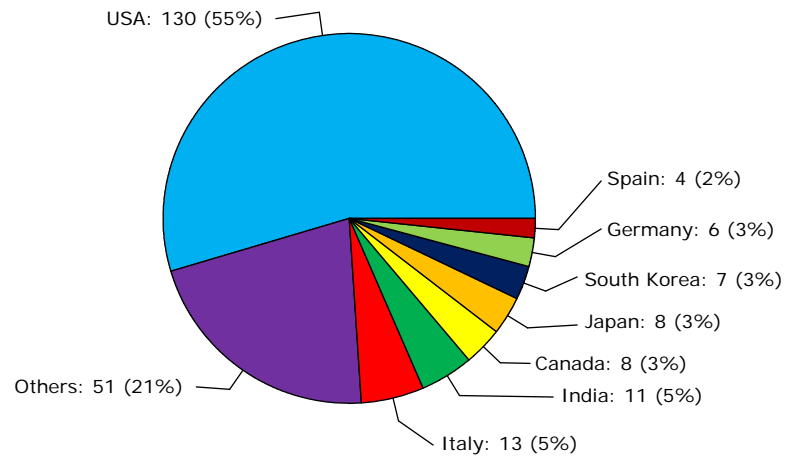
## Clinical Survey

- ◆ **Participant details.** Name, organisation, country.
- ◆ **Organisation.** Type of organisation: hospital general department, hospital specialist Stroke unit, specialist Stroke practice, Private Stroke Clinic, general practice or other.
- ◆ **Work.** Description of work: specialist physician in Stroke treatment, general physician or other (specified).
- ◆ **Stroke:** The percentage of physicians' patients who were tested for Stroke and subsequently diagnosed with Ischaemic Stroke, Haemorrhagic Stroke, Transient Ischaemic Attack (TIA) and other (specified).
- ◆ **Diagnosis:** the most important limitations of current diagnostic tests for Stroke.
- ◆ **Transient Ischaemic Attack.** Drug classes: the percentage of physicians' transient Ischaemic attack (TIA) patients who are prescribed antiplatelets, anticoagulants, thrombolytics, other (specified).
- ◆ **Ischaemic Stroke.** Drug classes: the percentage of physicians' Ischaemic Stroke patients who are prescribed antiplatelets, anticoagulants, thrombolytics, other.
- ◆ **Ischaemic Stroke.** Antiplatelet drug classes: the percentage of physicians' Ischaemic Stroke patients who are prescribed: aspirin (e.g. Aspro®), dipyridamole (e.g. Persantine®), clopidogrel (e.g. Plavix®), aspirin/dipyridamol (e.g. Asasantin®), ticlopidine (e.g. Ticlid®) or other (specified).
- ◆ **Ischaemic Stroke.** Anticoagulant drug classes: the percentage of physicians' Ischaemic Stroke patients who are prescribed warfarin (e.g. Coumadin®), heparin (e.g. Hepalean®), dicoumarol (e.g. Dicoumarol), antithrombin III (e.g. Thrombate III®), argatroban (e.g. Novastan®), bivalirudin (e.g. Angiomax®), sandoparin (e.g. Certoparin®), enoxaparin (e.g. Lovenox®), ethyl biscoumacetate (e.g. Tromexan®), nadroparin (e.g. Fraxiparine®) or other (specified).
- ◆ **Ischaemic Stroke.** Thrombolytic drug classes: the percentage of physicians' Ischaemic Stroke patients who are prescribed: Tissue Plasminogen Activator (e.g. Alteplase®) or other (specified).
- ◆ **Ischaemic Stroke.** Combined drug classes: combined drugs for the treatment of Ischaemic Stroke, with combinations specified.
- ◆ **Haemorrhagic Stroke.** General treatments: the percentage of physicians' Haemorrhagic Stroke patients who are treated with drug therapy alone, combined drug therapy/surgery, surgery alone and other (specified).
- ◆ **Haemorrhagic Stroke.** Treatments: the percentage of physicians' Haemorrhagic Stroke patients prescribed a clotting factor (e.g. vitamin K), clotting proteins (e.g. prothrombin), calcium channel blockers (e.g. nimodipine), antihypertensives, platelets, plasma or other (specified).
- ◆ **Haemorrhagic Stroke.** Combined drug classes: the use of combined drug classes for the treatment of Haemorrhagic Stroke, combinations specified.
- ◆ **Haemorrhagic Stroke.** Surgical procedures: the percentage of physicians' Haemorrhagic Stroke patients who are treated by aneurysm clipping, endovascular treatment of aneurysms, surgical arteriovenous malformation (AVM) removal, stereotactic radiosurgery, endovascular treatment of AVMs, removal of haematoma, ventriculostomy, carotid endarterectomy, craniotomy and others (specified).
- ◆ **Challenges and issues.** In the treatment of stroke: specified.

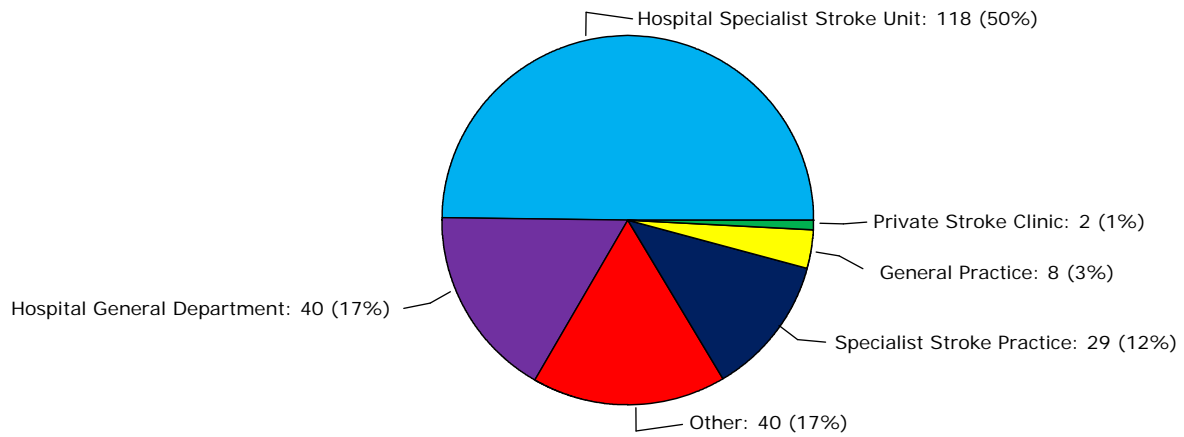


## Study Participants

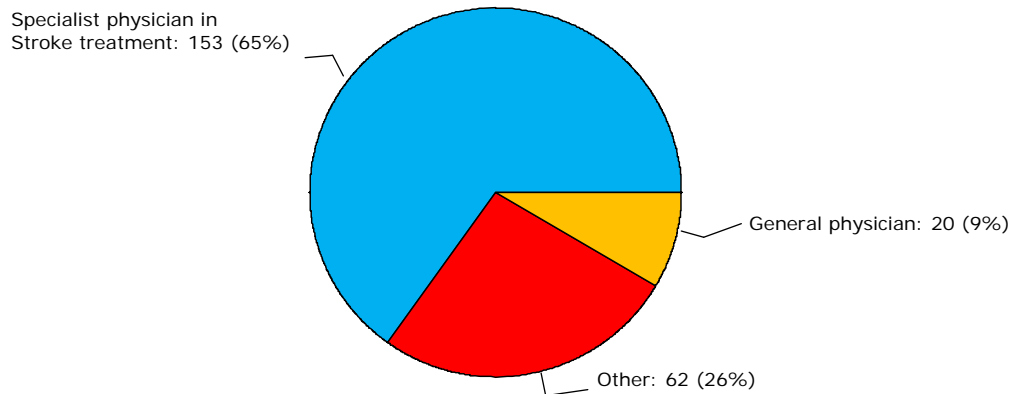
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### Clinical Centres



### Physicians





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## Appendix

Appendix 1. Responses given by study participants to the question: What are the major issues and challenges associated with the treatment of Stroke? These responses (which in some cases may be brief, informal or abbreviated) are presented verbatim, except in those cases where minor grammatical or typographical corrections have been made for reasons of clarity.