

The Consensus Actions

During the meeting participants were asked to submit points they felt should be included and addressed in the final consensus statement, based on the evidence and discussions that had taken place during the meeting. In the final section of the meeting, the panel and discussants agreed upon the major recommendations for improving the management of hypertensive patient to prevent stroke.

The following attendees participated in the MetaForum meeting and supported the European consensus:

- Dr. Thijs, Neurologist, Belgian Stroke Council, Belgium
- Dr. van de Borne, Belgian Hypertension Committee, Belgium
- Professor Davor Milicic, Croatia
- Ms. Lise Beha Erichsen, Managing Director, HjerneSagen, Denmark
- Dr. Palle Holck, Stroke Specialist, Silkeborg Centralsygehus, Denmark
- Professor Margus Viigimaa, Estonia
- Professor Esko Kumpusalo, University of Kuopio, Finland
- Professor Ilkka Tikkanen, Helsinki University, Finland
- Dr. Ernst Buhler, Städtische Kliniken Esslingen, Germany
- Dr. Markus Wagner, German Stroke Foundation, Germany
- Professor Asterios Karayiannis, Greece
- Professor Athanasios Manolis, Greece
- Dr. Rob Schotsman, General Practitioner, Holland
- Mr. Arthur Troostwijk, SAFE Board member, Holland
- Professor Rudolf deChatel, Hungary
- Ms. Anne Copeland, Volunteer Stroke Scheme, Ireland
- Ms. Pnina Rozenchwig, General Manager, Stroke Patient Association, Israel
- Dr. Marisa Sacchetti, Patient Association, Italy
- Dr. Augusto Zaninelli, Italian Stroke Forum, Italy
- Professor Mohammed Alami, Morocco
- Dr. Waleed Khoja, Saudi Arabia
- Professor J. van der Merwe, Council of Medical Schemes, South Africa
- Dr. M. Luisa Fernandez, Managing Director, Spanish Heart Foundation, and Member at Large, SAFE, Spain
- Mr. Jordi Txucla, Health Commission at the Spanish Parliament from the Convergencia I Unió party, Spain
- Dr. Per-Olof Hansson, Sahlgrenska University Hospital, Sweden
- Mr. Lennart Häwestam, Vice President, Stroke Association of Sweden, and Member, SAFE, Sweden
- Dr. Sven Haller, Neurologist, University Hospital of Basel, Switzerland
- Mr. Joe Korner, Director of Communications, The Stroke Association, United Kingdom
- Ms. Sarah Ransome, Blood Pressure Association, United Kingdom

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METAFORUM

METAFORUM ON

STROKE PREVENTION

IN HYPERTENSIVE PATIENTS

A EUROPEAN CONSENSUS CONFERENCE

CONSENSUS REPORT

11 APRIL 2005 | ROYAL COLLEGE OF PHYSICIANS | LONDON | UK

A multidisciplinary group of leading European experts convened at the Royal College of Physicians in London on 11th April 2005 for the MetaForum on Stroke Prevention in Hypertensive Patients to debate and reach consensus on actions to improve primary stroke prevention through the treatment of hypertension using evidence-based guidelines. Topics discussed included the epidemiology of stroke in hypertensive patients, the disease burden inflicted on the economy, healthcare systems and patients, as well as attitudes regarding stroke and associated risk factors amongst both healthcare professionals and patients, as well as evidence based guidelines and hypertension management.



**Professor Bryan Williams**  
Chairman, MetaForum on  
Stroke Prevention in  
Hypertensive Patients

The meeting, chaired by Professor Bryan Williams of the University of Leicester, UK, involved more than 40 European experts in hypertension, cardiology, neurology, social medicine and general practice, as well as representatives from public health and patient organisations from 24 countries.

The catalyst for discussion at the meeting were the results of a new structured literature review, which examined survey literature containing data from more than 50,000 patients, general public and physicians on what they know and how they act with regard to hypertension and stroke risk management. This new data revealed insights on physician and patient knowledge, perception and behaviour with regard to stroke prevention.

Other presentations focused on highlighting strategies to improve the management of hypertensive patients and target stroke prevention in primary care, as well as the role that pan-European patient associations, such as the Stroke Alliance for Europe (SAFE), can play in raising and, more importantly, sustaining awareness through educational activities and lobbying.

The primary aim of the MetaForum was to develop a consensus among the top stroke prevention experts to serve as a call to action for European healthcare practitioners, governments and patients to make stroke prevention more of a priority. As stroke incidence is on the increase, a solution to minimise the devastating consequences of stroke in Europe is urgently needed. The MetaForum consensus provides specific solution-oriented action points which must be undertaken at the national level throughout Europe in order to better manage hypertensive patients to improve stroke prevention.

## The Need for Urgent Action

Stroke claims the lives of over 1.2 million people each year in Europe alone<sup>1</sup> and is the third leading cause of death and most common cause of adult physical disability.<sup>2</sup> While stroke prevention is one of the main public health issues worldwide, the risk of stroke is highest in developed, industrialised countries. Furthermore, in Europe, stroke mortality rates are 60 percent higher than in the United States and Canada.<sup>3</sup> The stroke death rate correlates with the hypertension incidence. The problem is only going to get worse, as the incidence of hypertension is predicted to increase 60 percent by the year 2025, and affect a total of 1.56 billion people worldwide.<sup>4</sup>

The most serious consequence of uncontrolled hypertension is stroke, which represents an extremely significant and rapidly increasing burden on European healthcare services. However, the proven benefits of early intervention by treating hypertension go unrecognised by many physicians, particularly those in primary care. Ironically, treating hypertension is often allocated a lower priority in at-risk patients, such as the elderly. In addition, there is a large misperception that a heart attack is the main risk of uncontrolled hypertension, when in fact it is stroke that poses a significantly greater risk.

Consequently, stroke-risk assessment is not routinely performed by the majority of primary care physicians, which may explain the increased incidence of stroke in Europe compared to North America, where a larger number of patients – more than 66 percent - are on antihypertensive treatment.<sup>3</sup>

Patients, while concerned about stroke, are mostly unaware of the link between hypertension and risk of stroke. Awareness of the debilitating effects of stroke is also low amongst patients, and these factors, combined with physicians' typically reactive approach to treatment, create an ignorance that allows the risk of stroke to go unchecked and therefore 'hidden' until much too late.

Hypertension is by far the most modifiable risk factor for stroke (others include hypercholesterolaemia and atrial fibrillation), and proactive control of blood pressure can reduce stroke-associated morbidity and mortality.

Based on the evidence, and the ensuing discussion, the MetaForum expert panel and discussants reached consensus on several key actions that need to be undertaken in order to improve stroke prevention in hypertensive patients.

## Summary of Consensus Actions

- Create an urgency for physicians to understand the importance of stroke prevention in hypertensive patients
- Raise awareness about the potentially devastating effects of stroke and the importance of primary stroke prevention
- Motivate physicians to treat hypertension more aggressively to prevent primary stroke using an evidence based approach with proven therapies
- Improve treatment compliance among hypertensive patients to prevent stroke
- Educate governments on the burden and costs of inaction versus implementing proven modern therapeutic interventions to prevent stroke

Meeting Chair

Professor Bryan Williams - Professor of Medicine, University of Leicester, United Kingdom

Expert Panel Members

- Dr. Burkhardt Becker - General Practitioner, Braunschweig, Germany
- Professor Natan Bornstein - Chairman, Department of Neurology, Tel Aviv Sourasky Medical Centre, Israel
- Professor Antonio Coca - Professor of Internal Medicine, Senior Consultant, Chief of the Hypertension Unit, and Director of the Institute of Medicine and Dermatology, Hospital Clinic, School of Medicine, University of Barcelona, Spain
- Dr. Mark Davis - General Practitioner and Occupational Physician, Leeds, United Kingdom
- Professor Vida Demarin - Professor of Neurology, Head of University Department of Neurology, Sestre Milosrdnice University Hospital, Zagreb, Croatia
- Dr. Eigil Fossum - Cardiologist, Ullevaal University Hospital, Oslo, Norway
- Mr. Arne Hagen - President of the Stroke Alliance For Europe (SAFE), Norway
- Professor Guiseppe Mancia - Professor of Medicine and Chairman of the Department of Clinical Medicine, Prevention and Applied Biotechnologies of the University of Milan-Bicocca, Chairman of the Department of Medicine at the S. Gerardo Hospital, Monza, Milan, Italy
- Ms. Manuela Messmer-Wullen - Stroke survivor, Founding Member, SAFE Board
- Mr. Donal O'Kelly - Stroke survivor
- Professor Anita Rieder - Professor of Social Medicine, Medical University of Vienna, Austria
- Professor Massimo Volpe - Professor of Internal Medicine and Cardiology, Department of Experimental Medicine and Pathology, University of Rome, Italy

Reaching the Consensus - Discussion Summary

Introduction

Professor Bryan Williams opened the meeting explaining the meaning of the word MetaForum: **met·a** (mĕt'ă) *adj*, meaning beyond; transcending; more comprehensive and **fo·rum** (fôr'əm) *n*, meaning a public meeting or presentation involving a discussion usually among experts and often including audience participation. Therefore, a MetaForum is a meeting specifically designed to encompass comprehensive learning and discussion leading to consensus on a set of actions that are meant to transcend beyond the audience in the meeting. In fact it is the responsibility of the people involved in the MetaForum to take the consensus action points from the meeting and bring them to life in their local countries and regions.

The reason for hosting this MetaForum on stroke prevention in hypertensive patients was to address the urgent need in Europe to improve stroke prevention through better management of hypertensive patients. Professor Williams pointed out the importance of the MetaForum as an opportunity to prompt action both globally and locally in order to address the serious public health problems caused

by stroke. He informed the participants that by the end of the day they needed a clear consensus on how to approach this issue.

To facilitate discussions that would lead to a consensus, expert panel members presented on the following topics:

- Epidemiology of hypertension and stroke in Europe  
*Dr. Eigil Fossum*
- Burden of stroke  
*Professor Vida Demarin*
- Benefits of treatment for hypertensive patients to reduce the risk of stroke  
*Professor Guiseppe Mancia*
- Current physician and patient knowledge, perception and behaviour with regard to stroke risk reduction in hypertension  
*Professor Massimo Volpe*
- Strategies to improve the management of hypertensive patients for stroke prevention in primary care  
*Dr. Mark Davis*
- The role of the national patient association and the Stroke Alliance for Europe (SAFE)  
*Arne Hagen*

Epidemiology of Hypertension and Stroke in Europe



Dr. Eigil Fossum  
Cardiologist, Ullevaal University Hospital, Oslo, Norway

Following the introduction, Dr. Eigil Fossum began by highlighting the incidence of stroke and age-related increased prevalence of hypertension using demographic and country-specific data.

He highlighted that the risk of stroke is highest in developed, industrialised countries, and in Europe stroke mortality rates are 60 percent higher than in the United States and Canada.<sup>3</sup> This is related to the fact that among adults aged 35 to 64 years of age, only 23 to 38 percent of patients in Europe had their blood pressure controlled, compared to 66 percent in the United States.<sup>3</sup> He discussed the recent Lancet publication stating that the incidence of hypertension is predicted to increase by 60 percent by the year 2025, and affect a total of 1.56 billion people worldwide.<sup>2</sup>

Further evidence reviewed included the quantifiable risk of stroke and its relationship to hypertension. This evidence showed a steep increase in relative risk of stroke beyond certain ‘threshold’ levels of systolic and diastolic blood pressure (BP) – in fact, the risk appears directly proportional with a 20mm Hg increase corresponding to a twofold increased risk.<sup>5</sup> Thus, by controlling BP the risk of stroke can be significantly reduced.

Dr. Fossum made the point that the duration of most cardiovascular observational studies does not progress beyond five years, and that it is only by assessing the cumulative benefits over a patients lifetime that a truly accurate picture of hypertension and stroke incidence becomes clear, hence the need for more of this type of data.



He closed his presentation by summarising some key issues:

- Prevalence of hypertension increases steeply with age
- Hypertension is one of the strongest risk factors for stroke and overall morbidity and mortality worldwide
- Awareness, treatment and blood pressure control is inadequate in most countries and according to WHO, interventions to lower blood pressure are cost effective

Discussion on this presentation focused on the following:

- Stroke risk elimination is perhaps overly optimistic but a reduction in relative risk is achievable
- Current data is anomalous in explaining epidemiological differences. Further studies are needed which extrapolate this data

Burden of stroke



**Professor Vida Demarin**  
Professor of Neurology, Head of University Department of Neurology, Sestre Milosrdnice University Hospital, Zagreb, Croatia

Vida Demarin began by illustrating the WHO definition of stroke as a clinical syndrome, and as such, it is as multi-factorial in presentation as it is in aetiology. Again underlining that hypertension is the primary modifiable risk factor for stroke, Professor Demarin went on to highlight overall stroke mortality rates in both Western and Eastern Europe (10 percent and 13 percent respectively), as well as follow-up data (approximately one third dead at one year post-stroke).

The disease burden is far-reaching, as was illustrated by outcomes data showing significant levels of impairment and disability, with 25 percent of patients at one year post-stroke being dependent to some degree on carers whether healthcare services or family. The East-West gap most likely extends here, Professor Demarin concluded, due to availability of more sophisticated treatment and care in Western Europe.

“...the more spent on stroke treatment; the greater the chance the patient will survive.”

Discussion on this presentation focused on the following:

- Socioeconomic factors play an important role in predicting stroke survival and rehabilitation outcomes
- Stroke burden is not limited to stroke but also to associated psychiatric symptoms such as dementia and depression

Benefits of treatment for hypertensive patients to reduce the risk of stroke



**Professor Guiseppe Mancia**  
Professor of Medicine and Chairman of the Department of Clinical Medicine, Prevention and Applied Biotechnologies of the University of Milan-Bicocca, Chairman of the Department of Medicine at the S. Gerardo Hospital, Monza, Milan, Italy

Professor Guiseppe Mancia presented an overview of trial data, illustrating the effects seen using different therapeutic interventions. Most of the studies detailed showed that antihypertensive treatment had a beneficial effect and that a combination approach was more likely to yield superior outcomes in terms of primary prevention. Professor Mancia stressed the need to use evidence-based medicine when determining appropriate treatment with therapies that have demonstrated the ability to reduce primary stroke risk.

Looking at high-risk patients (e.g. patients with diabetes) where there is a strong epidemiological link between hypertension and stroke, it can be seen that aggressively treating to target levels (diastolic BP less than 80 mm Hg) can reduce relative risk in these patients. Professor Mancia cited this as evidence that it is incorporated in treatment recommendations of international guidelines.

Also presented was a review of trials concerned with treatments other than antihypertensives, targeting other treatable risk factors such as hypercholesterolaemia and atrial fibrillation. Recent trials showed that hyperlipidemia treatment could reduce the risk of stroke. In atrial fibrillation, according to the LIFE trial patients taking an angiotensin-receptor blocker had a lower risk of stroke than those treated with beta-blockers.

Professor Mancia summarised by clarifying that there is an urgent need to educate physicians to quantify cardiovascular risk, and in particular stroke risk, and with this in mind patients need to be aware of the critical importance of controlling high blood pressure. Physicians must prioritise stroke prevention by identifying those patients at risk for stroke early and by treating hypertension more aggressively with antihypertensive agents that have proven to reduce the risk of primary stroke. Citing an earlier question by Professor Williams’ on whether we are treating hypertension too late, he stated the answer was ‘yes’ and that it was imperative to prevent low-risk patients from becoming high-risk patients. When a physician notices any evidence of organ damage that could lead to cardiovascular risk, such as left ventricular hypertrophy (LVH), then they should consider prescribing an antihypertensive treatment.

“...over the last 25 years of studies looking at the relationship between hypertension and cardiovascular disease including stroke, it has been observed, almost without exception, that a reduction in blood pressure is followed by a reduction in events...”

Discussion on this presentation focused on the following:

- Inflammatory markers are important in early detection of at-risk patients
- It is vital to make use of clinically-valid surrogate endpoints in order for preventative treatment strategies to work

Current physician and patient knowledge, perception and behaviour with regard to stroke risk reduction in hypertension



Professor Massimo Volpe  
Professor of Internal Medicine and Cardiology, Department of Experimental Medicine and Pathology, University of Rome, Italy

Professor Massimo Volpe presented a new review of survey data concerning patient and physician attitudes toward stroke prevention.

Patient attitudes with regard to hypertension stem from a gross under-estimation of the importance of controlling BP and limited awareness of the clinical consequences. Hypertensive patients and the general public do not consider hypertension to be a serious health concern, which can mostly be attributed to the asymptomatic nature of hypertension. Whilst most are aware of the fact that lifestyle moderation can benefit hypertension, less than 10 percent will actually adopt this intervention. Public recognition of stroke as a leading cause of disability is also appreciably low.

Physician attitudes revolve around prioritising events prevented by use of antihypertensives, with myocardial infarction the foremost concern followed by stroke. Also common when prompted is the perception that hypertension can be defined quantitatively, namely by a threshold BP of, on average, 140/90. However, this definition alone does not allow for optimal stroke prevention. Findings also showed that management of hypertension was much less aggressive in elderly patients, the group most at risk for stroke.

Professor Volpe concluded by identifying the need for improved doctor-patient communication, highlighted by the fact that patients cite the media and family rather than their physician, as the main source of information about hypertension and stroke.

“...in terms of priorities on national healthcare agendas and the associated media attention, stroke almost seems to have been forgotten...”

Discussion on this presentation focused on the following:

- Doctors seem to have a paradoxical attitude toward hypertension, attaching a low priority to its treatment
- Mild hypertensive patients are actually at greatest risk for stroke
- There is a need for a multidisciplinary approach to treatment and prevention
- More education is needed on stroke and hypertension for both patients and doctors
- Awareness campaigns should use different media to reach different socioeconomic groups



Dr. Mark Davis  
General Practitioner and Occupational Physician, Leeds, United Kingdom

Strategies to improve the management of hypertensive patients for stroke prevention in primary care

Dr. Mark Davis' presentation opened with age-related stroke incidence data, with 25 percent of men and 20 percent of women having suffered a stroke by age 85. Dr. Davis speculated that in order to be effective, a prevention strategy should aim to treat hypertension in the at risk population, which in the UK may mean up to 70 percent of the population aged 70 years.

In all ages lifestyle modification is of utmost importance and contributes to the overall treatment algorithm for hypertension. Trends in other cardiovascular prescribing habits may also have an associated effect on

stroke prevention, in particular the widespread use of statins for hypercholesterolaemia.

Dr. Davis concluded by explaining that from a GP's perspective, patient self-management was vital to success and cited recent efforts in patients with diabetes as a particular example. He also detailed a model used in the U.K. by which GPs are given financial incentives to identify and then to effectively control their patients' hypertension as part of an overall cardiovascular program (treat to goal), thereby reducing the long-term disease burden.

“Performance-based payment for management of stroke care in primary care within the UK is proving successful.... a win-win situation...”

Discussion on this presentation focused on the following:

- Utilising nursing resources is vital in facilitating patient communications, with the financial resources benefiting the primary care team as a unit
- GPs in the UK are becoming more proactive and moving from post-event management to identification of risk and predisposing factors

Patient understanding and awareness of stroke risk reduction in hypertension and the role of the patient association



Mr. Arne Hagen  
President of the Stroke Alliance For Europe (SAFE), Norway

Arne Hagen, President of Stroke Alliance for Europe (SAFE) gave an overview of the organisation and outcomes data, highlighting "the burden in real terms". Mr Hagen, having suffered a stroke himself, highlighted the intention of SAFE to hold a European Stroke Prevention Day being held on a yearly basis, the first one taking place on May 10th this year, which resulted from a workshop on stroke prevention held in the European Parliament in June, 2003, and the "European 10 point action plan: 'STROKE - A Preventable Catastrophe.'" He stressed the need not only for pan-European action, but also for plans at the national level to improve stroke prevention.

“...Establishing a dialogue between patient organisations and healthcare professionals has never been so important in terms of public awareness of stroke, and it is essential that politicians heed this and fund the costs of treatment appropriately...”

Meeting Conclusion

Professor Williams summed up and closed the meeting, stating:

"We will put together a consensus document based on the discussions here today, and in terms of its use, my own opinion is that we provide it to all the hypertension societies, cardiovascular disease prevention societies, stroke associations, primary care organisations, and other patient associations, in order to highlight the key importance of screening for risk factors for stroke and the need for intervention and trying to prevent stroke altogether."

MetaForum On Stroke Prevention In Hypertensive Patients: European Consensus

Hypertension, the number one risk factor for stroke, is becoming an increasingly critical public health issue throughout Europe and the world. A stroke has devastating consequences for the individual, the family, society and public health systems. Stroke can result in severe long-term disability or death for many patients. Hypertension can be controlled by medical treatment, thereby significantly reducing the risk of a stroke, yet in Europe the number of primary strokes due to uncontrolled high blood pressure is increasing. It is now more critical than ever to make stroke prevention in hypertensive patients a priority on the healthcare agendas of governments, physicians and patients.

Stroke is a preventable catastrophe, yet we still have much progress to make

- The number of adults with hypertension worldwide is predicted to total more than 1.5 billion in 2025, an increase of 60 percent, according to a study published in the *Lancet* <sup>4</sup>
- The risk of stroke is highest in developed, industrialised countries. However, in Europe, it remains 60 percent more common than in the United States and Canada <sup>3</sup>
- Stroke claims the lives of over 1.2 million people each year in Europe alone,<sup>1</sup> and is the third leading cause of death and most common cause of adult physical disability.<sup>2</sup>

We the undersigned join together to strengthen our commitment to manage hypertension more aggressively and further the cause of stroke prevention. As a healthcare community, we must continue to recognise the clear link between controlling hypertension, treatment with proven preventive therapy, a decline in stroke rates, and lives saved. We pledge to lead the pursuit of managing this urgent issue and achieve more optimal patient outcomes through the following action steps.

Action Steps:

- **Create an urgency for physicians to understand the importance of stroke prevention in hypertensive patients**
  - Create a stroke prevention working group within the European Society of Hypertension
  - Develop tools to support knowledge and sustained compliance with European Society of Hypertension/European Society of Cardiology (ESH/ESC) hypertension treatment guidelines or with established national guidelines
  - Publish the literature review on current physicians and patient knowledge, perception and behaviour with regard to stroke risk reduction in hypertension in order to show the lack of serious consideration of hypertension and stroke
- **Raise awareness about the potentially devastating effects of stroke and the importance of primary stroke prevention**
  - Patient groups need to first identify and then communicate actively with patients, physician organisations and governments
  - Patient groups should activate governments to implement sustainable and tailored campaigns on stroke prevention in patients with hypertension
  - Governments should promote programs for healthy lifestyle and educate on other risk factors for stroke such as obesity, smoking, lack of physical activity and the need for lifestyle changes
  - Leverage a European Stroke Prevention Day on an annual basis with national programmes
- **Motivate physicians to treat hypertension more aggressively to prevent primary stroke**
  - Treat with hypertension therapies proven to reduce the risk of stroke
  - Physician organisations should encourage physicians to treat hypertensive patients early and aggressively
  - Implement cardiovascular risk assessment programs and use multifactorial interventions to maximally reduce the risk of cardiovascular disease and thereby reduce the risk of stroke
  - Highlight and educate on the increasing incidence of atrial fibrillation as another major risk factor for stroke, especially in people with hypertension

- **Improve treatment compliance among hypertensive patients to prevent stroke**
  - Share best practices of successful and creative patient compliance and management systems for stroke prevention with all key shareholders
  - Develop national education programmes to:
    - Communicate the link between hypertension, an a-symptomatic disease, and stroke
    - Communicate the importance of early primary stroke prevention in hypertensive patients
- **Educate governments on the burden and costs of inaction versus implementing proven modern therapeutic interventions to prevent stroke**
  - Publish a public health report on the trends and the burden of the hypertension and stroke
  - Collate national data on risk factors, incidence and prevalence
  - Establish a definition of the burden of stroke (both direct and indirect costs) and produce a definitive report on the associated health economics
  - Support the establishment of a national stroke prevention strategy across Europe
  - Governments should be encouraged to implement population based strategies with strict national standards and regular audits

Professor Bryan Williams  
Professor of Medicine, University of Leicester, United Kingdom

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