

## **PhD-course**

### **Danish Cardiovascular Research Academy and the Nordic Medical Research Councils**

**Title of the course:**

Hypertension and cardiovascular ageing – Bridging basic research and clinical science

**Aim:**

- 1) Based on the hypothesis that cardiovascular disease is related to early vascular ageing we aim to bridge basic research and clinical science connecting new research in ageing with development of subclinical cardiovascular damage and clinical cardiovascular disease primarily in hypertension.
- 2) To help Nordic PhD student to develop research networks among other Nordic PhD students as well as among different senior Nordic researchers within the area of cardiovascular disease.

**Content:**

The content of the course can be divided in following six parts:

- I) Genetics for ageing and cardiovascular disease
- II) The pathogenesis of hypertension
- III) Subclinical CV damage and risk calculation
- IV) Secondary hypertension
- V) Clinical trials, guidelines and daily practice
- VI) Conclusions

**Participants.**

PhD students

**ECTS points:**

2

**Language.**

English

**Form.**

Short “State of the art” lectures followed by lively discussions supplemented with two sessions during which the participants shall present their work followed by short expert comments and discussions.

**Course director.**

Associated professor Michael Hecht Olsen

**Teachers.**

Hans Ibsen, Michael H. Olsen, Boye L. Jensen, Kent L. Christensen, Peter Nilsson, Thomas Kahan, Karin Manhem, Lars Lindholm, Sverre E. Kjeldsen, Ingrid Toft, Eva Gerds, Ingrid Os, Rune Mo, Frej Fyhrquist, Ilkka Kantola, Antti Jula, Olle Melander, Gun Jörneskog/Majid Kalani, Børge Nordestgaard, Christian Aalkjær, Lia Bang, Tine Hansen, Torben Jørgensen, Jørgen Jeppesen, Kristian Wachtell, Jacob Møller, Jens Berning, Michael Larsen, Carl Erik Mogensen, Tine W. Hansen, Marie Frimodt-Møller, Troels Thomsen, Ulrik Andersen, Per Løgstrup

**Dates:**

May 13-15 2009

**Place.**

Hotel Frederiksdal, Frederiksdalsvej 360, 2800 Kgs. Lyngby, Denmark

**Fee.**

Euro 200

**Course secretary.**

Anne-Grethe Thorn  
Department of Internal Medicine  
Glostrup University Hospital  
Ringvejen, 2600 Glostrup, Denmark

**Registration:**

Interested PhD students have to apply by sending an application in which the PhD students have to give the reason for application, describe their PhD project and enclose their CV before February 1<sup>st</sup> 2009 to the course director:

Associated professor Michael Hecht Olsen  
Department of Internal Medicine  
Glostrup University Hospital  
Ringvejen, 2600 Glostrup, Denmark

Based on curriculum vitae and application the organizing committee will select the participants and give them notification by March 1<sup>st</sup> 2009 enable them to forward by email a portrait picture and 10-20 lines summarizing their background and research interest to Michael Hecht Olsen ([mho@dadlnet.dk](mailto:mho@dadlnet.dk)) within April 1<sup>st</sup> 2009.

Furthermore, participants are asked to prepare a 7 min talk about their research, which has to be forwarded to Michael Hecht Olsen by email [mho@dadlnet.dk](mailto:mho@dadlnet.dk) by April 1<sup>st</sup> 2009 enable the organizers to prepare a 3 min evaluation.

**Title:**

**Hypertension and cardiovascular (CV) ageing – Bridging basic research and clinical science**

**Prior to seminar:**

Participants are selected by the organizing committee based on curriculum vitae and application

Participants are asked to prepare a 7 min talk about their research, which has to be forwarded to the organizers 1 month in advance. One of the organizers prepares a 3 min evaluation to be followed by a 5 min discussion.

Participants and organizers are asked to forward a portrait picture and 10-20 lines summarizing their background and research interest. This information will be assembled in a book and send to the participants and organizers at least 1 month before the seminar in order to prepare ideas for possible research networking in advance.

**General rules about lectures**

As the concept of this seminar is to create research networks between young and senior researchers within as well as in-between the Nordic Countries all lectures should be interactive with room for questions and if relevant group assignments.

**Announcement:**

Through the Journals and websites of National Societies of Hypertension as well as Cardiology

**Sponsors:**

Danish Cardiovascular Research Academy and the Nordic Medical Research Councils

**Economic guarantee:**

Department of Internal Medicine, Glostrup Hospital

**Location:**

Hotel Frederiksdal, Frederiksdalsvej 360, 2800 Kgs. Lyngby, Denmark

## **Preliminary program:**

### **Wednesday May 13<sup>th</sup>:**

- 09.00      *Registration and coffee*
- 09.30      Concept (interaction leading to research network) and content of seminar (HI, MHO)
- I)            Hypertension and cardiovascular ageing (Wednesday)
  - II)           Subclinical CV damage and risk calculation (Thursday)
  - III)           Secondary hypertension (Friday)
  - IV)           Clinical trials, guidelines and daily practice (Friday)
  - VI)           Conclusions (Friday)
- 09.40      Short presentation of participants (20 min) (Hans Ibsen)
- Hypertension and CV ageing (10 min) (Michael H. Olsen)
  - Early vascular ageing (concept, factors of influence) (15 min) (Peter Nilsson)
- 10.25      *Ultra-short break*
- 10.30      Genetics of ageing (30 min) (Kaare Christensen)
- Genetics of hypertension and CV disease (15 min) (*Børge Nordestgaard*)
  - Genetics of hypertension and CV disease (15 min) (Olle Melander)
  - Molecular research in ageing (20 min) (Anders Olsen)
  - Discussion (20 min)
- 12.10      *Lunch*
- 13.10      Physiological research in hypertension and CV ageing
- Sympathetic nervous system (15 min) (Sverre E. Kjeldsen)
  - Kidney (15 min) (Boye L. Jensen)
  - Renin Angiotensin Aldosterone system (15 min) (Frej Fyhrquist)
  - Vascular (15 min) (*Christian Aalkjær*)
  - Discussion (20 min)
- 14.30      *Ultra short break*
- 14.35      Blood pressure measurements in hypertension
- Definition of white coat and masked hypertension (15 min) (Lia Bang)
  - Prognostic importance of ambulatory vs. office blood pressure (IDACO) (15 min) (Tine Hansen)
  - Home blood pressure measurements (15 min) (Ilkka Kantola)
- 15.35      *Ultra short break*

- 15.40 Development and treatment of essential hypertension  
Epidemiologi (15 min) (Torben Jørgensen)  
Pathogenesis and insulin resistance in hypertension (15 min)  
(Jørgen Jeppesen)  
How can we do better? (15 min) (Lars Lindholm)  
Discussion (10 min)
- 16.35 *Coffee break*
- 16.45 Basic research from 7 participants 7 x (7+3+5) min (parallel session)
- 16.45 Clinical research from 7 participants 7 x (7+3+5) min (parallel session)
- 18.30 *End*
- 19.30 *Dinner*

**Thursday May 14<sup>th</sup>:**

- 08.30 Gender differences in hypertension (15 min) (Karin Manhem)  
Prediabetes and diabetes in hypertension (15 min) (Ingrid Toft)
- 09.00 *Ultra short break*
- 09.05 Evaluation of Cardiac damage in hypertension  
Myocardial fibrosis (15 min) (Thomas Kahan)  
LV hypertrophy and left atrial size (15 min) (Eva Gerdts)  
Systolic LV function (15 min) (*Kristian Wachtell*)  
Diastolic LV function (15 min) (*Jacob Møller*)  
Regional LV function (15 min) (*Jens Berning*)  
Discussion (20 min)
- 10.40 *Coffee break*
- 10.55 Evaluation of microvascular damage in hypertension and CV ageing  
Retinal vessels (15 min) (*Michael Larsen*)  
Forearm blood flow, resistance arteries (15 min) (Kent L.Christensen)  
Diabetic microcirculation (15 min) (Majid Kalani)  
Albuminuria in diabetes (15 min) (Per Løgstrup Poulsen)  
Albuminuria in hypertension (15 min) (Hans Ibsen)  
Discussion (20 min)

**12.30-16.45 *Lunch at the lake and canoe sailing***

- 16.45 Basic research from 7 participants 7 x (7+3+5) min (parallel session)  
16.45 Clinical research from 7 participants 7 x (7+3+5) min (parallel session)  
18.30 *End*  
19.30 *Dinner*

**Friday May 15<sup>th</sup>:**

- 08.30 Evaluation of macrovascular damage in hypertension and CV ageing  
Compliance and pulse wave reflection (15 min) (?)  
Pulse wave velocity and AAI (15 min) (Tine W. Hansen)  
Augmentation index and central BP (15 min) (Marie Frimodt-Møller)  
IMT and atherosclerotic plaques (15 min) (Michael H. Olsen)  
Discussion (10 min)
- 09.40 *Short break*
- 09.50 Risk calculations and clinical implications  
Pre-card and HeartScore (15 min) (*Torben Jørgensen?*)  
New risk markers (15 min) (Michael H. Olsen)  
Discussion (10 min)
- Secondary hypertension  
Nephrogen hypertension (15 min) (Ingrid Os)  
Renal artery stenosis (15 min) (Ulrik Andersen)  
Hyperaldosteronism (15 min) (Per Løgstrup Poulsen)
- 11.15 *Coffee break*
- 11.35 Guidelines (10 min) (SEK)
- 11.45 Non-pharmacological antihypertensive treatment (15 min) (Antti Jula)
- 12.00 Clinical trials in relation to guidelines and daily practice  
Special anti-hypertensive drug groups (15 min) (Hans Ibsen)  
Evidence for treating low risk and very old patients (15 min) (Rune Mo)  
Lower BP in patients with CV disease (15 min) (Thomas Kahan)  
Discussion (15 min)
- 13.00 Oral and written evaluation
- 13.30 *Lunch*

## **Organizing committee:**

**Denmark:** Professor Hans Ibsen (HI)

Department of Internal Medicine, Holbæk Hospital  
(President of the Danish Society of Hypertension)

Associated professor Michael Hecht Olsen (MHO)

Department of Internal Medicine, Glostrup University Hospital  
(Council Member of the European Society of Hypertension)

Professor Boye L. Jensen (BLJ)

Inst. of Medical Biol. – Physiol. and Pharmacology, University of Southern Denmark

Associated professor Kent Lodberg Christensen (KLC)

Department of Internal Medicine, Århus University Hospital

**Norway:** Professor Sverre E. Kjeldsen (SEK)

Department of Cardiology, Ullevaal University Hospital, Oslo  
(Past President of the European Society of Hypertension)

Professor Eva Gerds (EG)

Institute of Medicine, University of Bergen and  
Haukeland University Hospital, Bergen  
(President of the Norwegian Society of Hypertension)

Professor Ingrid Os (IO)

Department of Nephrology, Ullevaal University Hospital, Oslo

Chief physician, Dr.med. Rune Mo (RM)

Department of Cardiology, St. Olavs Hospital University Hospital, Trondheim  
(Secretary of the Norwegian Society of Hypertension)

Professor Ingrid Toft (IT),  
Department of Nephrology, Tromsø University Hospital  
(Vice-President of the Norwegian Society of Hypertension)

**Sweden:** Professor Lars Lindholm (LL)  
Department of Public Health and Clinical Medicine, Umeå University  
(President of the International Society of Hypertension)

Professor Thomas Kahan (TK)  
Department of Internal Medicine, Karolinska Institute, Stockholm  
(President of the Swedish Society of Hypertension)

Associated Professor Peter Nilsson (PN)  
Institute for Clinical Science, Malmö University Hospital  
(Council Member of the European Society of Hypertension)

Chief physician Karin Manhem, Göteborg University Hospital (KM)  
(mail: karin.manhem@hjl.gu.se)

**Finland:** Associated Professor Ilkka Kantola (IK)  
Department of Medicine, Turku University Hospital

Associated Professor Antti Jula (AJ)  
Public Health Institute, Turku

Professor Frej Fyhrquist (FF)  
Helsinki University Central Hospital, Helsinki