

## **PhD student Anupa Rijal**

Place of enrolment: University of Southern Denmark, Faculty of Health Science

Principal supervisor: Michael Hecht Olsen, Department of Internal Medicine, Holbæk Hospital, University of Southern Denmark

**Title of project:** Management of hypertension, type 2 diabetes and cardiovascular disease in low- and middle-income countries

## ABSTRACT

Cardiovascular disease is the leading cause of death globally. Elevated blood pressure is the strongest modifiable risk factor for cardiovascular disease, but despite extensive knowledge on treatment and prevention of hypertension, the burden of hypertension and cardiovascular disease is disproportionately high especially in low- and middle-income countries. A similar burden is also seen within type II diabetes.

Among the various prevention and treatment modalities aiming to reduce global burden of cardiovascular disease, the RESOLVE initiative focuses primarily on identification and treatment of hypertension. Contrary to this simplistic approach, the HEARTS initiative of the World Health Organization (WHO) includes identification and treatment of hypertension, hypercholesterolemia, and diabetes. These two different strategies reflect weaknesses in the current evidence on the optimal strategy to prevent cardiovascular disease in low- and middle-income countries. By conducting warranted systematic reviews of randomised clinical trials, this PhD aims to identify the most effective strategy for management of hypertension, type II diabetes and cardiovascular disease, especially in low- and middle-income countries. Based on the results of these systematic reviews the ultimate aim of this PhD is to design a large randomised clinical trial for management of hypertension, type II diabetes and cardiovascular disease in low- and middle-income countries.

## ABSTRAKT

Hjertekarsygdom er den hyppigste dødsårsag globalt. Forhøjet blodtryk er den stærkeste modificerbare risikofaktor for hjertekarsygdom, men på trods af betydelig viden om forebyggelse og behandling af forhøjet blodtryk, er byrden af hypertension og hjertekarsygdom disproportionalt høj særligt i lande med lav-middel indkomst. En tilsvarende udfordring er også gældende for type II diabetes.

Blandt de forskellige forebyggelses- og behandlings-modaliteter til at reducere den globale byrde af hjertekarsygdom, fokuserer RESOLVE initiativet primært på identifikation og behandling af hypertension. I modsætning til denne simple strategi omfatter WHO's HEARTS initiativ identifikation og behandling af både hypertension, hyperkolesterolæmi og diabetes. Tilstedeværelsen af disse to fundamentalt forskellige strategier afspejler svagheder i den aktuelle evidens omkring den optimale strategi for forebyggelse af hjertekarsygdom i lande med lav-middel indkomst.

Formålet med dette Ph.d. projekt er at identificere den mest effektive strategi for behandling af hypertension og type II diabetes og forebyggelse af hjertekarsygdom særligt i lav-middel indkomst lande vha. nye systematiske reviews.

Det ultimative mål er at designe og udføre et stort randomiseret klinisk forsøg omkring behandling af hypertension, type II diabetes og forebyggelse af hjertekarsygdom i lande med lav-middel indkomst baseret på resultaterne af de systematiske reviews.