

# Prevention of Cardiovascular Disease in Diabetes Patients after the SPRINT- and ACCORDION-Study – and a New Meta Analysis

Helmut Schatz\*

Professor, Ruhr-University Bochum, Germany

\*Corresponding author: Univ.-Prof. Dr. med. Dr. H.C. Helmut Schatz, Ruhr-University Bochum, Buerkle-de-la-Camp-Pl. 1, D-44789 Bochum, Germany, Tel: +49-234-302 6324; Fax: +49-234-302 6315; E-mail: [helmut.schatz@rub.de](mailto:helmut.schatz@rub.de)

In November 2013, the two European Societies for Hypertension and Cardiology, in a joint guideline, recommended a target blood pressure of <140/90 mm Hg for all including high risk patients with diabetes, renal and cardiovascular disease [1]. Based on the NHANES data 2005-2010, the U.S. JNC8 also delivered similar blood pressure targets in 2014 [2,3]. In September 2015 the NIH wrote about their SPRINT study [4] in a press release [5]: “Landmark NIH study shows intensive blood pressure management may save lives” and recommended a target for systolic RR of 120 mm Hg. This study had included patients with high cardiovascular risk, diabetes patients, however, have not been included in the SPRINT study, since a similar investigation in diabetics; the ACCORD study was already under way. ACCORD showed no benefit of intensive RR lowering compared to standard care [6].

After publication of the SPRINT study, the ACCORD data were again analysed including the long-term follow-up study of ACCORD, the ACCORDION trial. Dr. William Cushman, [7] the chief investigator of ACCORD, presented the results on November 10, 2015 at the Congress of the American Heart Association. A significant interaction between blood pressure and glycemic interventions became apparent now ( $p=0.037$ ), with evidence for benefit of intensive blood pressure lowering in participants randomized to standard glycemia therapy ( $HR=0.79$ ). In an interview with Medscape, Dr. Cushman [7] explained: “This is a secondary analysis, but it does put a different colour on the results, especially given what SPRINT has shown... The bottom-line message is we don't have a level-A evidence to treat diabetics to a target of 120 mm Hg, but taking into account results from the standard-glycemic-control arm of ACCORD, including those from the long-term follow-up, and the stroke benefit seen in the main trial, together with the SPRINT results, I would say it is appropriate to include diabetic patients when making recommendations of intensive blood pressure control. In addition, we have to take into consideration the fact that in most trials the benefits of blood-pressure reduction in diabetics are at least as good if not better than in nondiabetics” [8].

On January 30, 2016 Xinfang Xie et al. [9] published in the Lancet a systematic review and meta analysis of 19 randomized controlled trials between 1950 and 2015 about treatment of hypertension (9). The trials which they included had to last >6 months (mean: 3.8 years). The 45 000 patients included also people with diabetes and renal diseases. The achieved reductions in the intensive arms vs. the less intensive arms were -14% for major cardiovascular events, -13% for myocardial infarction, -22% for stroke, -10% for albuminuria and -19% for retinopathy progression. There were no clear effects on heart failure (-9%), cardiovascular death (-9%), total mortality (-9%) or end-stage kidney disease (-10%). More severe adverse effects were observed in the intensive arms. Severe hypotension:

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Relative risk 2.68 (1.21–5.89,  $p=0.015$ ), the absolute excess was, however, small. In an accompanying editorial [10], Brunström and Carlberg point out that only 5 of the 19 trials were confined to diabetes patients. The achieved blood pressure was found within wide ranges: In the intensive arms: Mean 133/76 mmHg, range 118/75 – 144/82, in the less intensive arms: Mean 140/81 mmHg, range 124/80 – 154/81. So a considerable individual overlap was observed between the two arms. Altogether, the final results can hardly apply to diabetes in general.

In his own practice, the author treats his diabetes patients with hypertension in the following way [10]:

Systolic blood pressure: >150-160 mm Hg: Lifestyle+Pharmacotherapy, 130-150 mm Hg: Lifestyle, individualized also+pharmacotherapy, especially >140 mm Hg<130 mm Hg: Lifestyle only.

→ PERSONALIZED MEDICINE!

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