



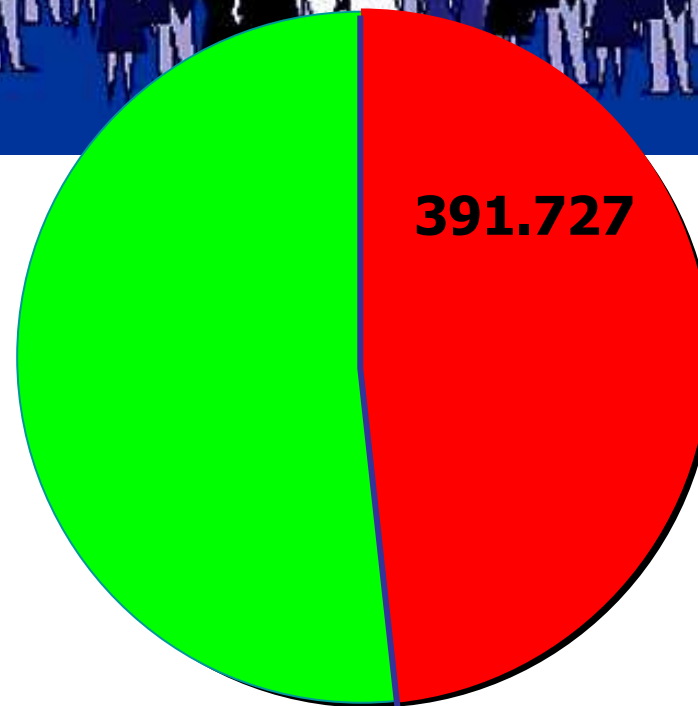
dezentrale interventionelle Blutdruck-Telemetrie



Tod durch kardiovaskuläre Ereignisse



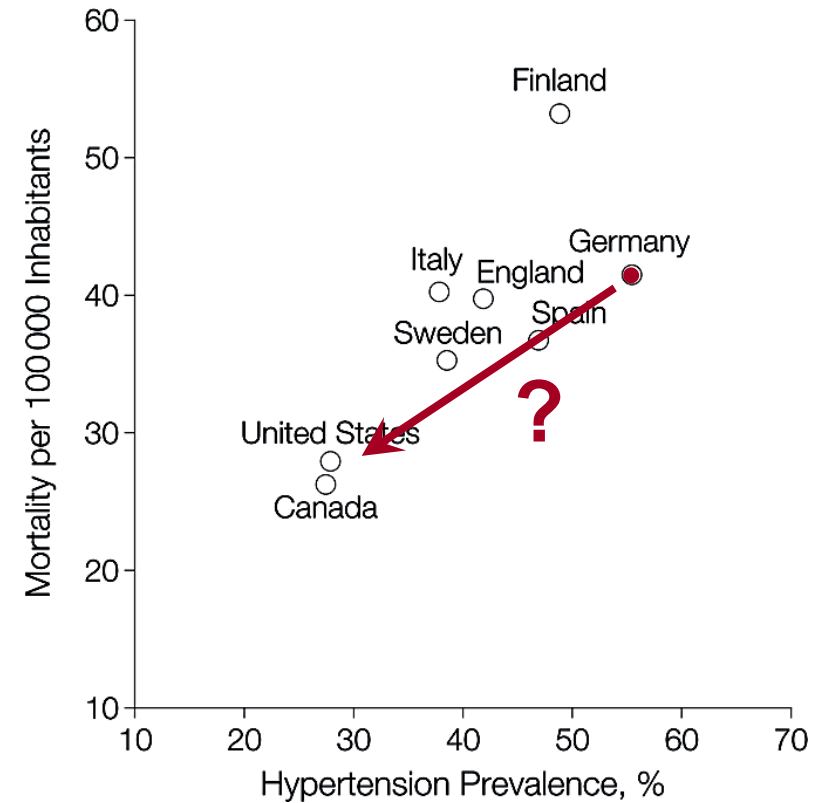
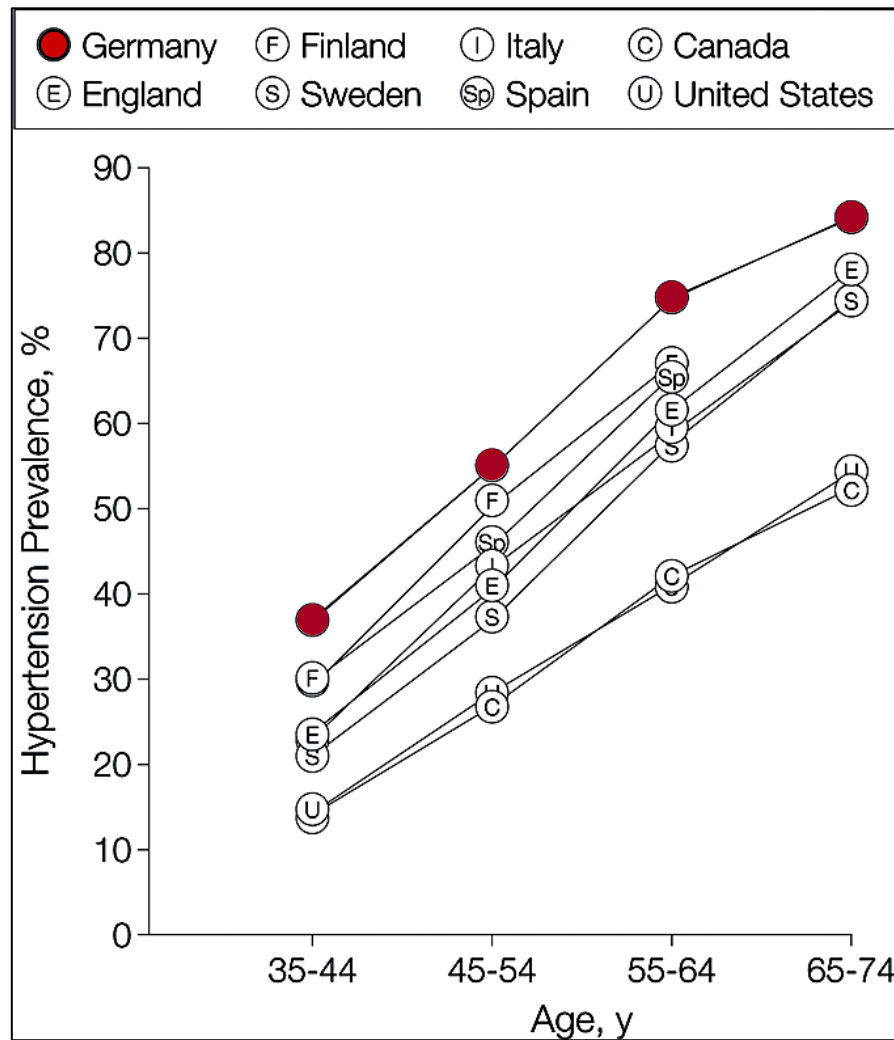
828.541
Todesfälle
insgesamt



(47,3%)
kardiovaskulär
bedingt

Dies entspricht
annähernd der
Einwohnerzahl
der Städte Kiel und
Lübeck zusammen.

Prävalenz und Prognose



Wolf-Maier et al.; JAMA 2003; 289; 18: 2363-2369

DEFINITIONEN UND

Klassifikation

Blutdruckwerte (mmHg)



Category	Systolic		Diastolic
Optimal	120	and	<80
Normal	120-129	and/or	80-84
High Normal	130-139	and/or	85-89
Grade 1 Hypertension	140-159	and/or	90-99
Grade 2 Hypertension	160-179	and/or	100-109
Grade 3 Hypertension	≥180	and/or	≥110
ISH	≥140	and	<90

2007 Guidelines for the Management of Arterial Hypertension
European Society of Hypertension/European Society of Cardiology
Journal of Hypertension 2007;25:1105-1187

Blutdruckziele für unterschiedliche Blutdruckmeß-Methoden

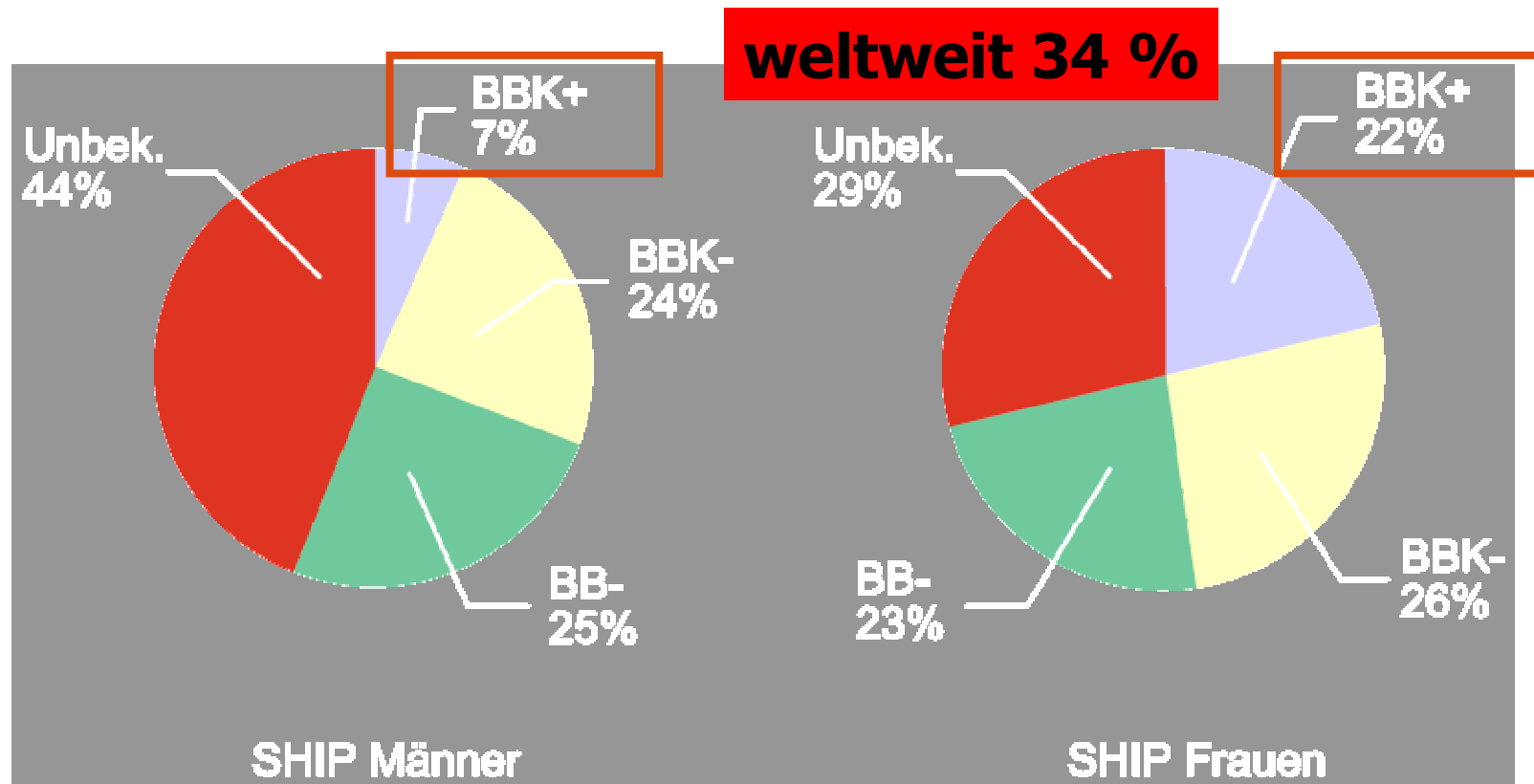


	SBP	DBP
Office or Clinic	140	90
24-hour	125-130	80
Day	130-135	85
Night	120	70
Home	130-135	85

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Prävalenz und Therapie der arteriellen Hypertonie

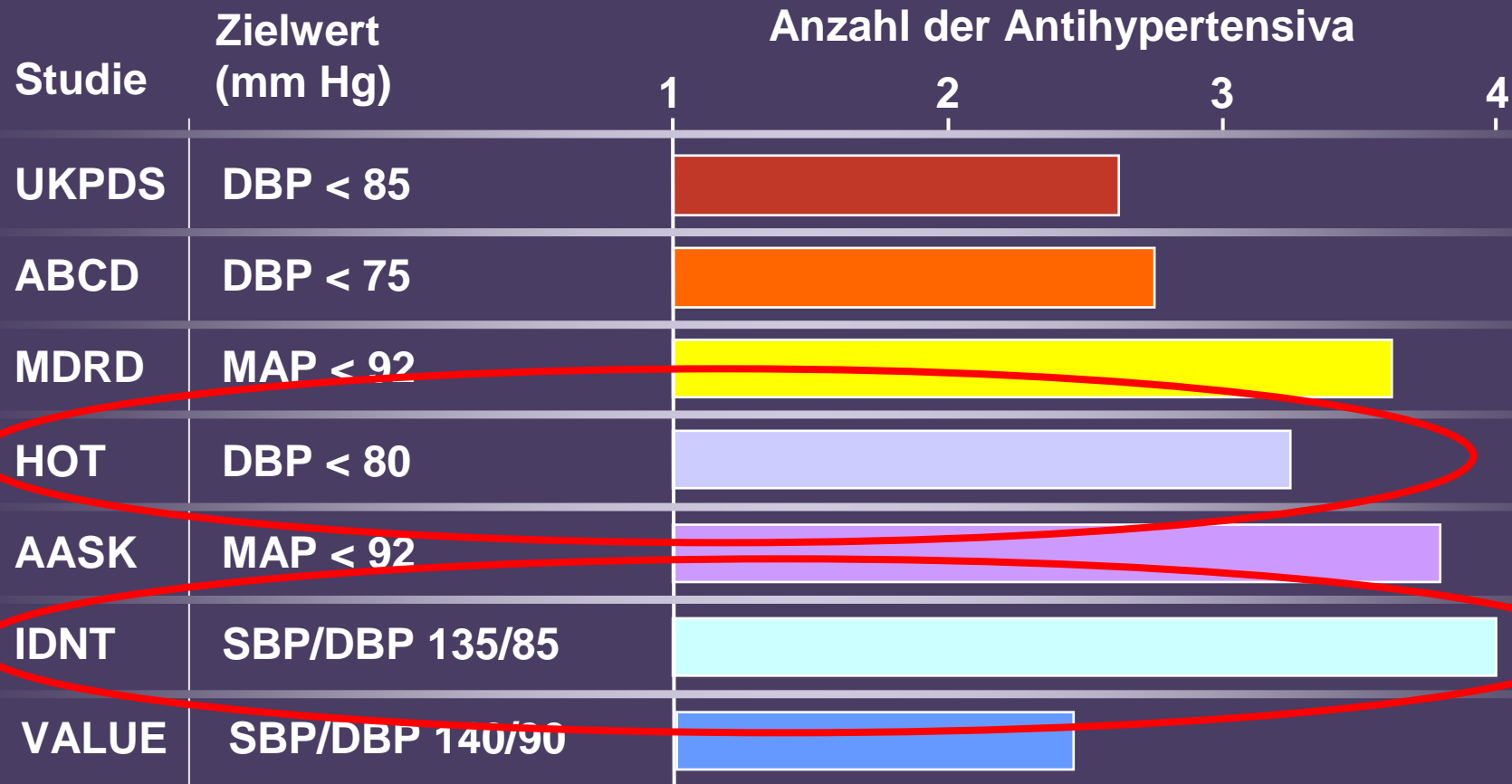
SHIP: Patienten mit
bekanntem, behandeltem und kontrolliertem Blutdruck in Deutschland



BBK + bekannt, behandelt, kontrolliert
BBK - bekannt, behandelt, nicht kontrolliert
BB - bekannt, nicht behandelt

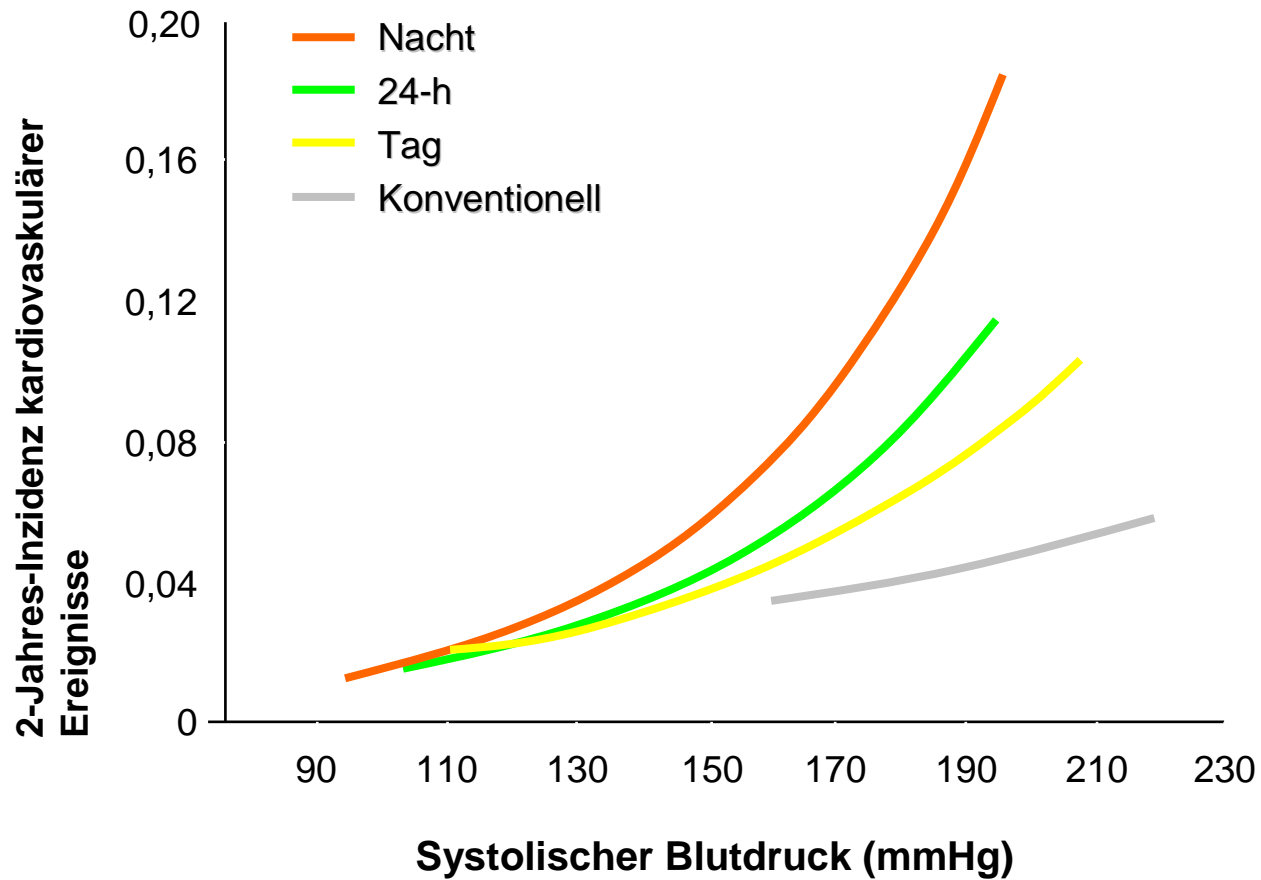
Ergebnisse einer bevölkerungsrepräsentativen
Querschnittsstudie, 1997 – 2001

Anzahl Antihypertensiva zur Erreichung des Ziel-Blutdruckes



UKPDS = United Kingdom Prospective Diabetes Study; ABCD = Appropriate Blood Pressure Control in Diabetes; MDRD = Modification of Diet in Renal Disease; HOT = Hypertension Optimal Treatment; AASK = African American Intervention Study of Kidney Disease; IDNT = Irbesartan Diabetic Nephropathy Trial.
 VALUE = Valsartan Antihypertensive Longterm Use Evaluation
 Bakris et al. Am J Kidney Dis. 2000;36:646-661. Lewis et al. N Engl J Med. 2001; 345: 851-860.
 Julius et al., Lancet 2004; 363: 2022-31

Zusammenhang zwischen kardio-vaskulären Ereignissen und ambulanter Blutdruckmessung



Staessen JA, et al., JAMA 1999;282:539-546.

TBPM: ESC/ESH Guidelines



10. Follow-up (Box 22)

During the drug titration phase patients should be seen often (e.g. every 2 to 4 weeks) in order to adjust the chosen treatment regimen (increase in drug dose, addition of other drugs, dose reduction or drug withdrawal) in accordance to the achieved blood pressure or the appearance of side effects.

In this phase dose titration and goal achievement may be helped by instructing the patient to self-measure blood pressure at home. Once the goals of therapy have been reached, including the achievement of target blood pressure and control of all correctable risk factors, the frequency of visits can be reduced considerably. **Patients with low cardiovascular risk** and mild degrees of blood pressure elevation **may be seen every 6 months** whereas patients with a higher initial blood pressure or a high or very high cardiovascular risk should be seen more often. Frequent follow-up visits are also needed in patients on non-pharmacological treatment because 1) compliance to this intervention is low [500,584], 2) the blood pressure response is variable [820], and 3) this treatment requires reinforcement, and in case of failure, timely shift to drug administration.

Homemeasurement of blood pressure may allow to extend the periods between visits, and further **simplification of the follow-up visit schedule may be offered by new technologies, such as teletransmission of home blood pressure values to the physician's office, which has been shown to further improve patient's adherence to treatment [821].**

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Schema for Evaluating Need for Treatment

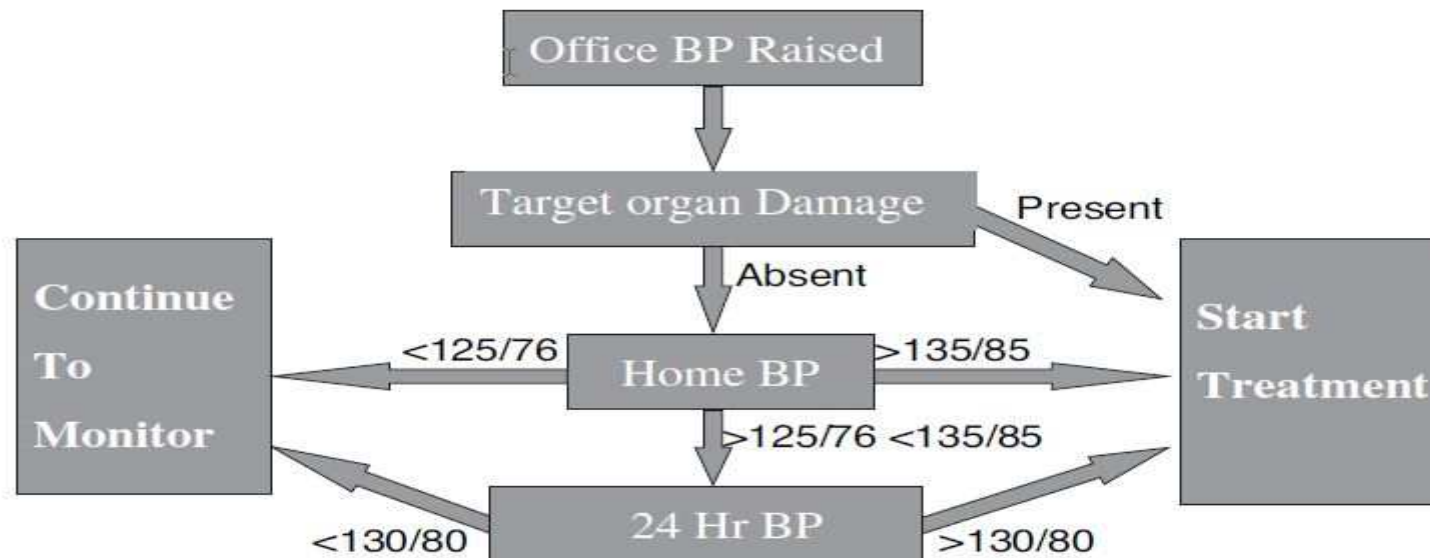


Figure 2. Schema for evaluating BP status of hypertensive patients, which can be used in patients in whom the decision to start treatment may be uncertain on the basis of the office BP, which may be just above or below the cutoff point defining adequate control. HBPM may be used to aid the diagnosis if necessary in conjunction with ABPM.

Pickering et al., Hypertension, 2008, Parati et al. J. Hypertens 2008.

iTBPM

= interventionelle Blutdrucktelemetrie



blood pressure transmission by bluetooth to mobile phone



intervention by phone

blood pressure by SMS to terminal server

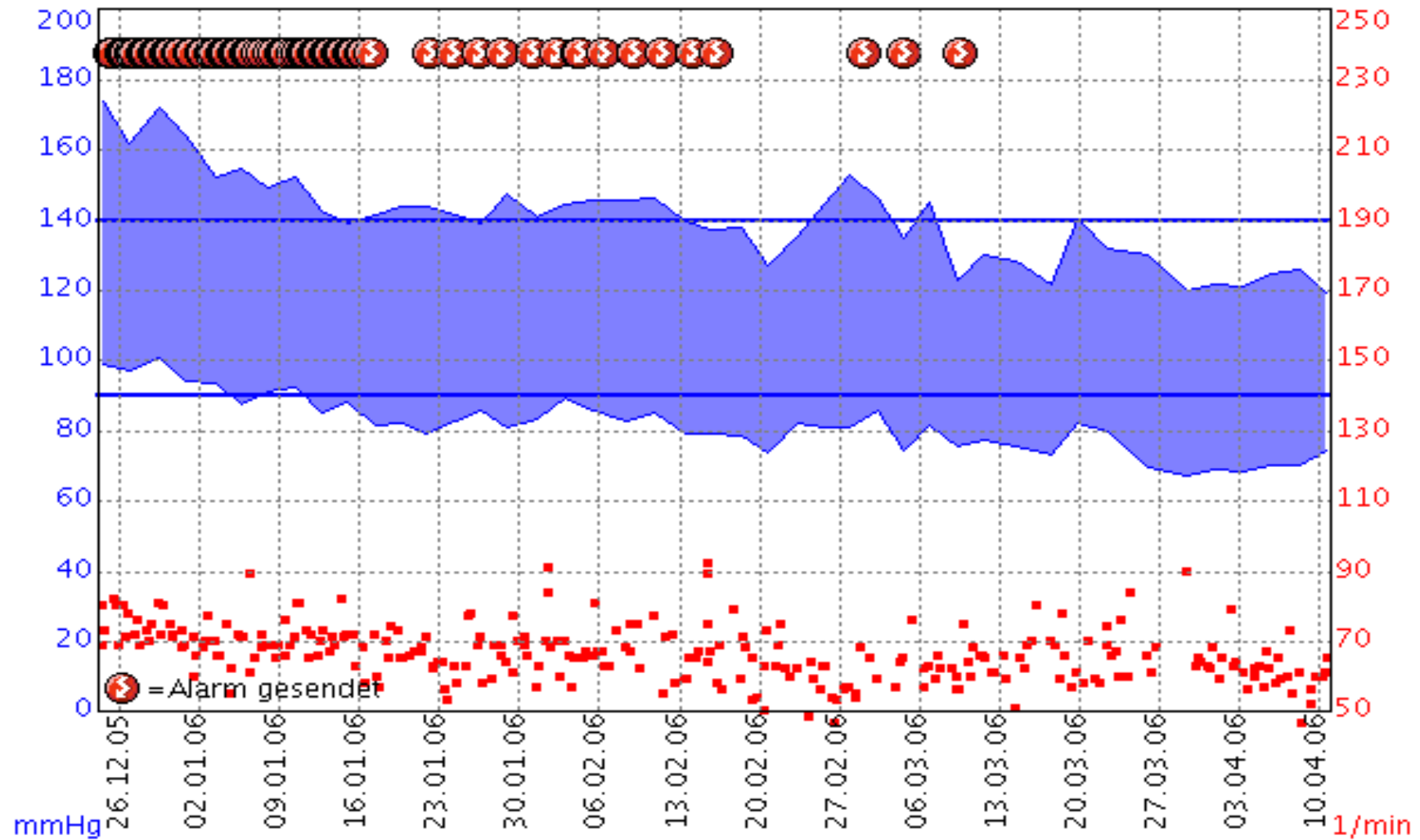


alarm report by email to responsible physician



Schulz et al., J Clin Hypertens 2007

iTBPM: Monatsbericht



Warum interventionelle Telemetrie? Blutdrucksenkung nach 3 Monaten

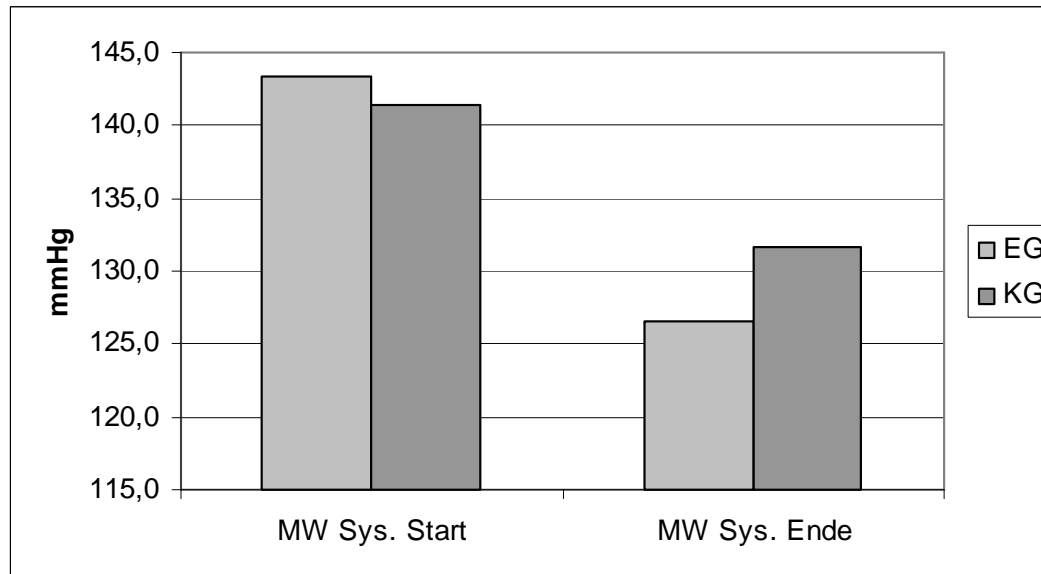


fig.1 Mittelwert des systolischen Blutdrucks zu Beginn der Studie und zum Abschluss der Studie in Experimentalgruppe/ Kontrollgruppe

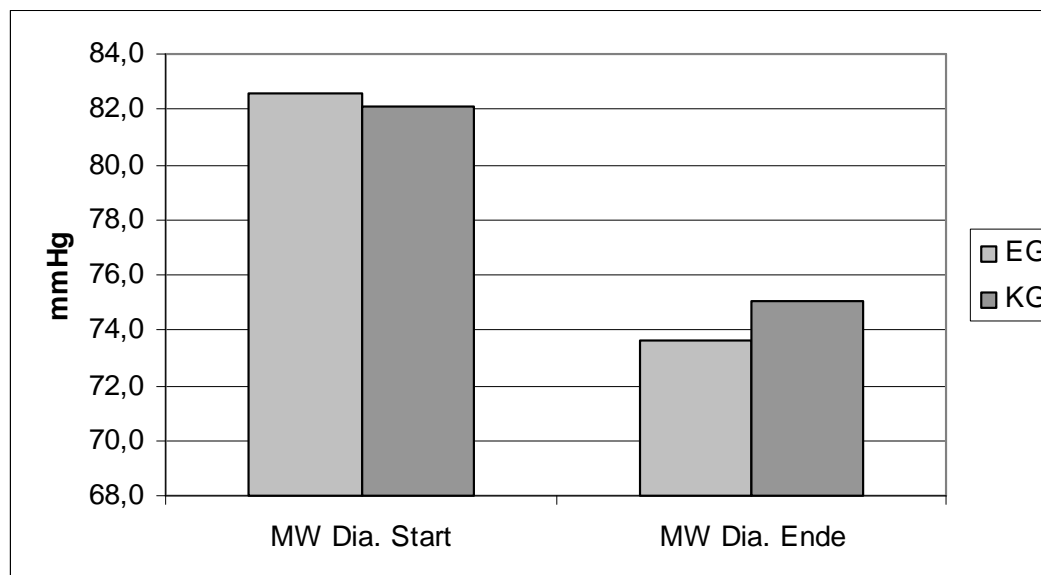


fig.2 Mittelwert des diastolischen Blutdrucks zu Beginn der Studie und zum Abschluss der Studie in Experimentalgruppe/ Kontrollgruppe

Warum interventionelle Telemetrie? Blutdrucksenkung nach 3 Monaten

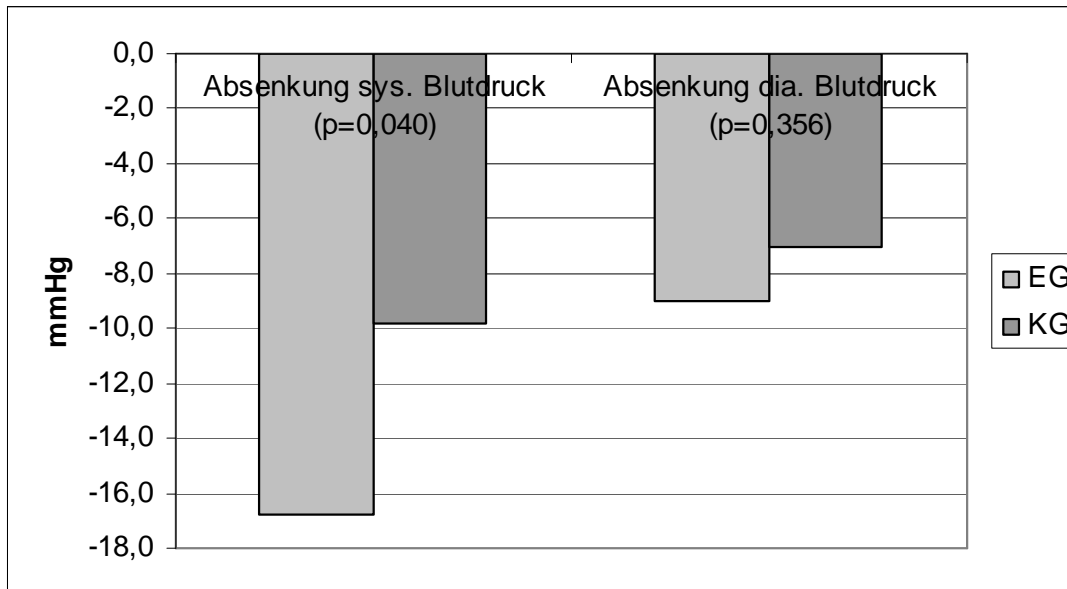


fig.3 Absenkung der Mittelwerte des systolischen und des diastolischen Blutdruckes in der Kontrollgruppe/ Experimentalgruppe

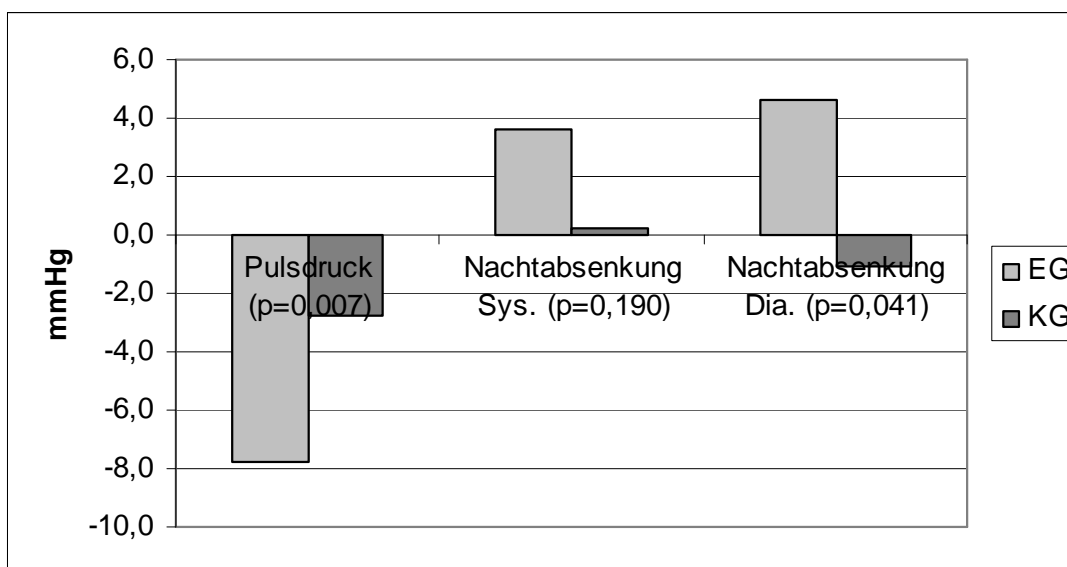


fig.4 Unterschiede in der Kontrollgruppe/ Experimentalgruppe in Bezug auf den durchschnittlichen Pulsdruck und Nachtabsenkung des systolischen/ diastolischen Blutdruckes

Warum interventionelle Telemetrie? Blutdrucksenkung nach 3 Monaten

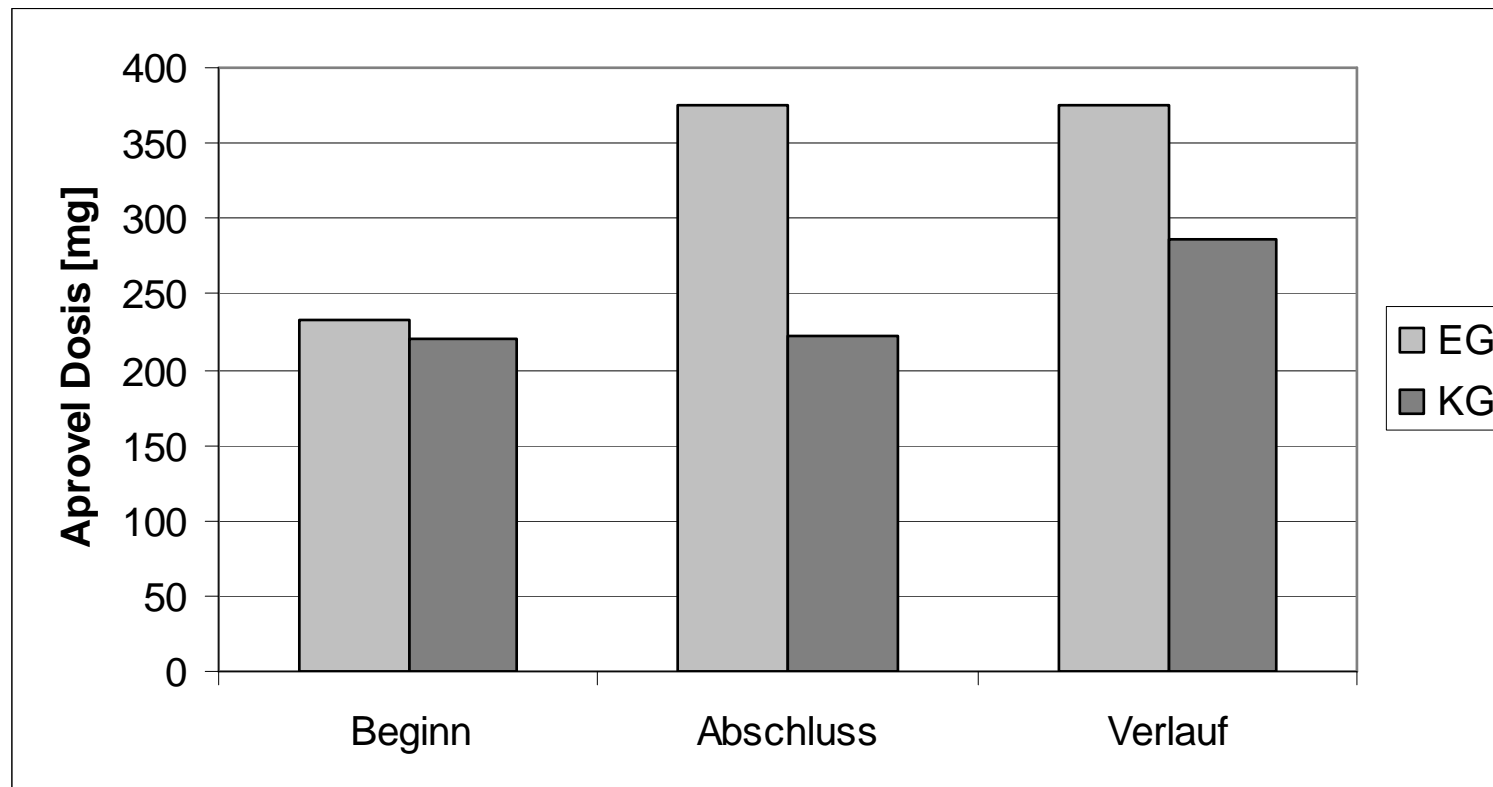


fig.5 Unterschiede zwischen der Experimentalgruppe (EG) und Kontrollgruppe (KG) in Bezug auf den Mittelwert der Aprovel Dosis in Milligramm zu den verschiedenen Studienphasen.

Warum interventionelle Telemetrie? Blutdrucksenkung nach 3 Monaten

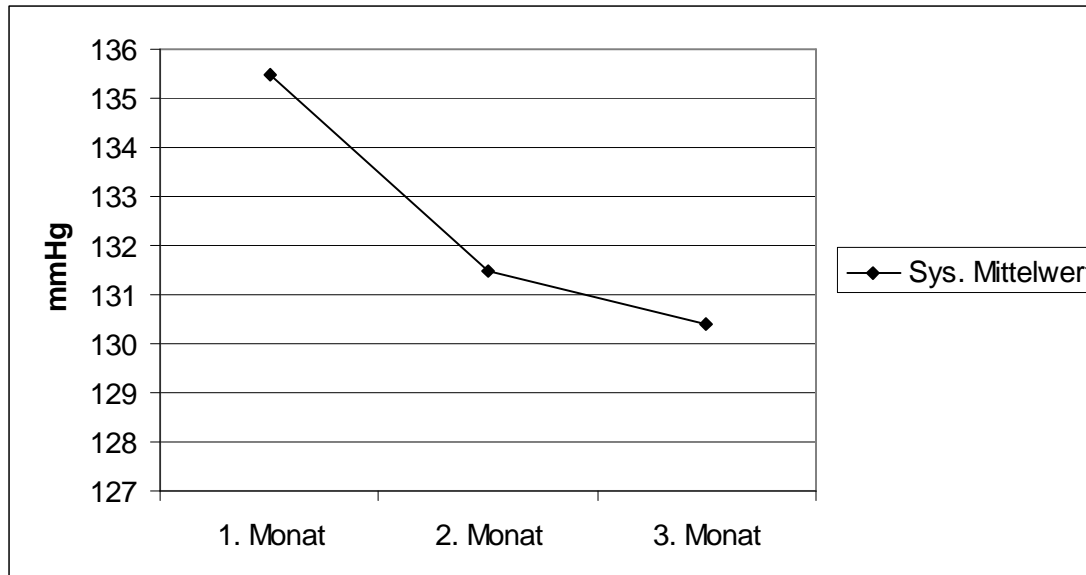


fig.6 Mittelwerte des systolischen Blutdrucks (Experimentalgruppe) aus den telemetrischen Eigenmessungen im Verlauf.

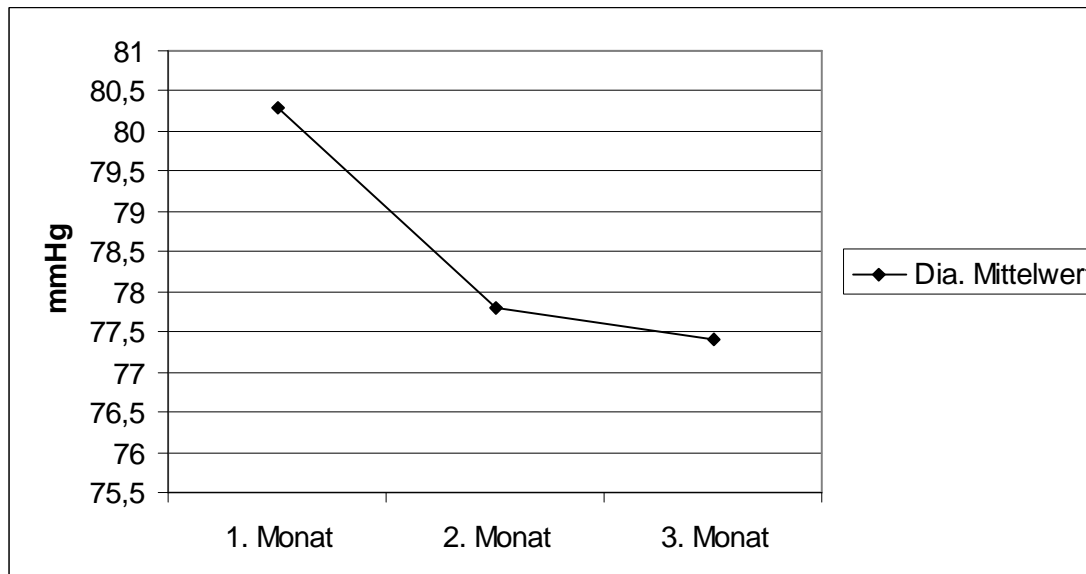
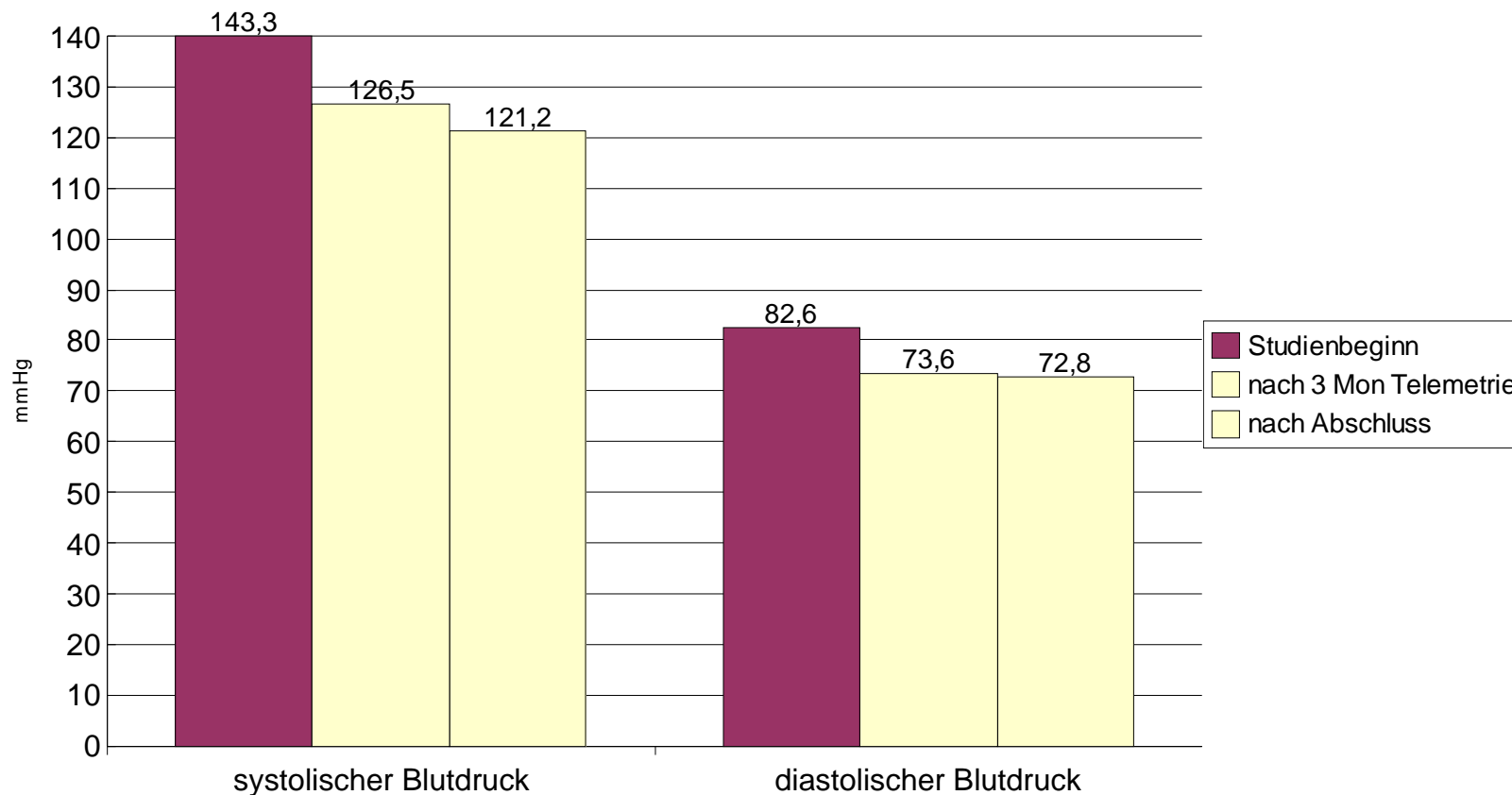


fig.7 Mittelwerte des diastolischen Blutdrucks (Experimentalgruppe) aus den telemetrischen Eigenmessungen im Verlauf.

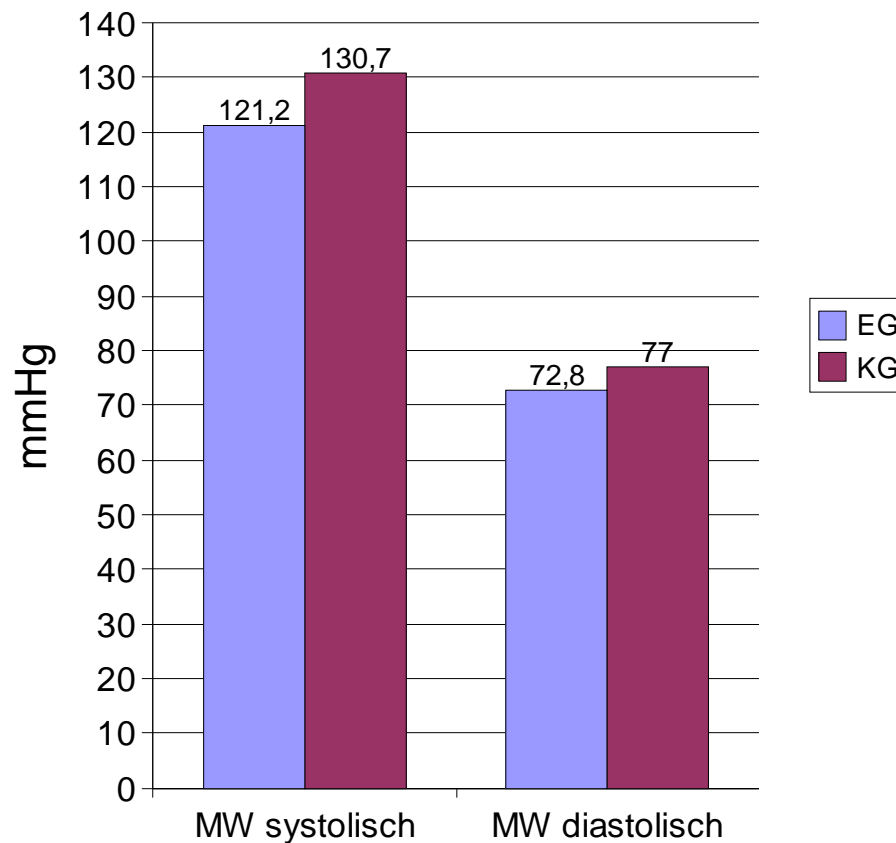
Warum interventionelle Telemetrie? Blutdrucksenkung 18 Monate danach

Mittlere Blutdruckwerte der Experimentgruppe



Warum interventionelle Telemetrie? Blutdrucksenkung 18 Monate danach

mittlere Blutdruckwerte



mittlere Veränderung

