Improvement of LDL-C target value achievement through cardiac rehabilitation in patients with Acute Coronary Syndrome: Data from PATIENT-CARE registry

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BACKGROUND

ESC-Guidelines on acute coronary syndromes (ACS), cardiovascular disease prevention and management of dyslipidemias recommend a LDL-Cholesterol (LDL-C) < 70 mg/dl (1,8 mmol/l) in patients (pts) after myocardial infarction (STEMI and NSTEMI). In former studies in pts without cardiac rehabilitation (CR), a LDL-C < 70 mg/dl was reached in less than 1/3 of pts, even in high risk populations.

PURPOSE

The aim of the PATIENT-CARE registry is to document clinical and demographic data, risk factors and medication in patients with STEMI or NSTEMI admitted to CR.

METHODS

Since April 2016, 980 consecutive patients (pts) were included in 18 German rehabilitation facilities. Pts characteristics, co-morbidities, Body-Mass-Index (BMI), blood pressure (BP), lipid profile and changes in medication including daily dosage were documented at admission (Adm) and at discharge (Dis) to evaluate the percentage of guideline adherent therapy and LDL-C goal attainment through optimization of medication and lifestyle-changes during CR.

RESULTS

Mean age of pts was 62 years, 73 % men, 47 % STEMI, 51 % NSTEMI. CR was started at an average of 19 days after the index event. Average duration of comprehensive CR was 22 days. All pts. completed a standardized training program with at least 5 x 30 min of physical exercise per week, nutrition counselling, education on healthy lifestyle, stress management, counselling on psychosocial risk factors and smoking cessation if necessary. 97 % of the patients were on statin therapy: 65 % received atorvastatin (mean daily dosage 38 mg/dl), 30 % were on simvastatin (mean daily dosage 34 mg). 13 % of the patients received any other lipid lowering medication, thereof 11 % ezetimibe.

Fig. 1: LDL-C in mg/dl

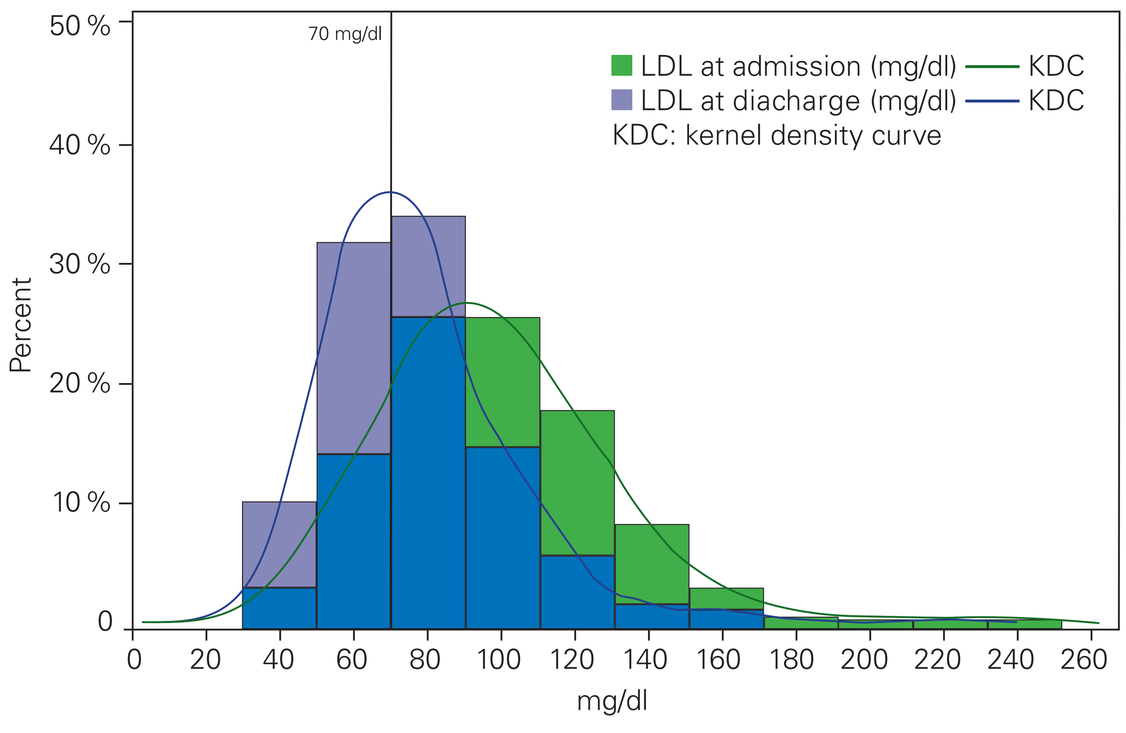
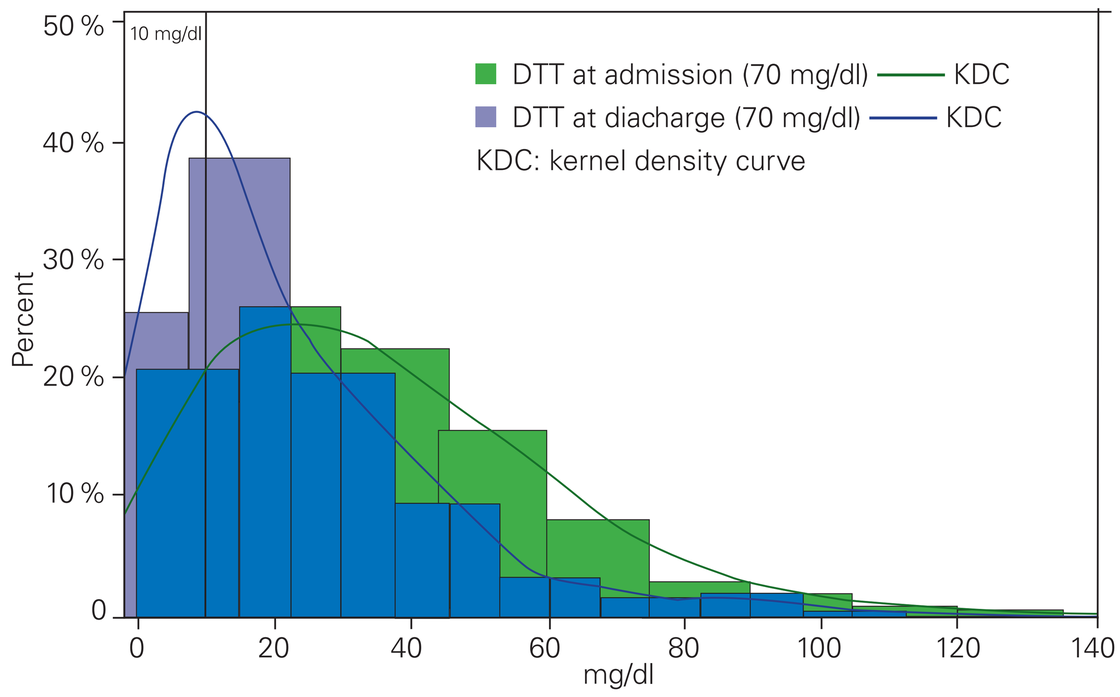


Fig. 2: Distance to target (DTT) – LDL-C <70 mg/dl (1,8 mmol/l)



Tab. 1: Parameters: admission vs. discharge

Parameter	Admission	Discharge	p-value
BMI	29 kg/m²	28,6 kg/m²	0,7398
Total cholesterol (TC)	160 mg/dl	137 mg/dl	< 0,0001
LDL-C	95 mg/dl	77 mg/dl	< 0,0001
HDL-C	44 mg/dl	44 mg/dl	0,0540
Triglycerides (TG)	146 mg/dl	123 mg/dl	< 0,0001
Blood pressure	128/77 mmHg	122/73 mmHg	< 0,0001 (both)
Plasma glucose (PG)	114 mg/dl	111 mg/dl	< 0,0001
Heart rate (bpm)	69	68	0,2327
HbA1c	6,7 %	6,7 %	0,1903
Exercise capacity (Watt)	106	118	< 0,0001
LDL-C goal <70 mg/dl	22 %	43 %	< 0,001
Atorvastatin: Percentage of pts. median daily dose	**50 %** 37 mg	**65 %** 38 mg	
Simvastatin: Percentage of pts. median daily dose	**43 %** 32 mg	**30 %** 34 mg	
Other lipid lowering therapy	**3,3 %**	**13 %**	
Average distance to LDL-C goal <70 mg/dl	35 mg/dl	22 mg/dl	

CONCLUSION

Cardiac Rehabilitation significantly increased the achievement of LDL-C goal < 70 mg/dl (1,8 mmol/l) to 43 % of pts. with STEMI or NSTEMI. Blood pressure, plasma glucose, triglycerides and exercise capacity were improved significantly through cardiac rehabilitation.

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Disclosure: the PATIENT-CARE registry was sponsored by MSD SHARP & DOHME GmbH
CJ is employee of MSD SHARP & DOHME GmbH; BS, UZ, AG received honoraria from MSD SHARP & DOHME GmbH

Improvement of risk parameter profile in patients with Acute Coronary Syndrome through cardiac rehabilitation

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3 MSD SHARP & DOHME GmbH, Lindenplatz 1, Haar, Germany for the PATIENT-CARE registry.

BACKGROUND

In patients (pts) after myocardial infarction (STEMI and NSTEMI) cardiac rehabilitation (CR) should help to improve prognosis and quality of life. Therefore patients in CR receive training and instructions to increase physical and mental capabilities. In addition, treatable risk factors should be modified by medical therapy and lifestyle changes.

PURPOSE

The aim of the PATIENT-CARE registry is to document clinical and demographic data, risk factors and medication in patients with STEMI or NSTEMI admitted to CR.

METHODS

Since April 2016, 980 consecutive patients (pts) were included in 18 German rehabilitation facilities. Pts characteristics, co-morbidities, Body-Mass-Index (BMI), blood pressure (BP), lipid profile and changes in medication were documented at admission and discharge to evaluate guideline adherent therapy, goal attainment and optimization of medication as well as lifestyle-changes during CR.

RESULTS

Mean age of pts was 62 years, 73% men, 47% STEMI, 51% NSTEMI. CR was started at an average of 19 days after the index event. Pts. presented with diabetes 26%, hypertension 75%, positive family history 39%, active smoker 24%, and former smokers 41 %. Overall 9% of the pts had had at least one prior myocardial infarction before the index event for the current CR. Nearly half of the pts (45%) were still employed, 44% were already retired. Average duration of comprehensive CR was 22 days. All pts. completed a standardized training program, nutrition counselling, education on healthy lifestyle, stress management, counselling on psychosocial risk factors and smoking cessation if necessary. 88% of the patients being in full employment before ACS could be discharged to full employment in their former profession.

Tab. 1: Medication: admission vs. discharge

Medication	Admission	Discharge
Anti-platelets	81 %	96 %
Oral anti-coagulants	8 %	11 %
ACE-inhibitors	71 %	69 %
Sartans	19 %	22 %
Ca-antagonists	14 %	14 %
ß-Blocker	86 %	88 %
Anti-diabetica	18 %	23 %
Statin	95 %	97 %
Atorvastatin: **Percentage of pts.** **median daily dose**	 **50 %** 37 mg	 **65 %** 38 mg
Simvastatin: **Percentage of pts.** **median daily dose**	 **43 %** 32 mg	 **30 %** 34 mg
Ezetimibe	2,5 %	11 %
Average distance to LDL-C goal <70 mg/dl (1,8 mmol/l)	35 mg/dl	22 mg/dl

Tab. 2: Parameters: admission vs. discharge

Parameter	Admission	Discharge	p-value
BMI	29 kg/m²	28,6 kg/m²	0,7398
Total cholesterol (TC)	160 mg/dl	137 mg/dl	< 0,0001
LDL-C	95 mg/dl	77 mg/dl	< 0,0001
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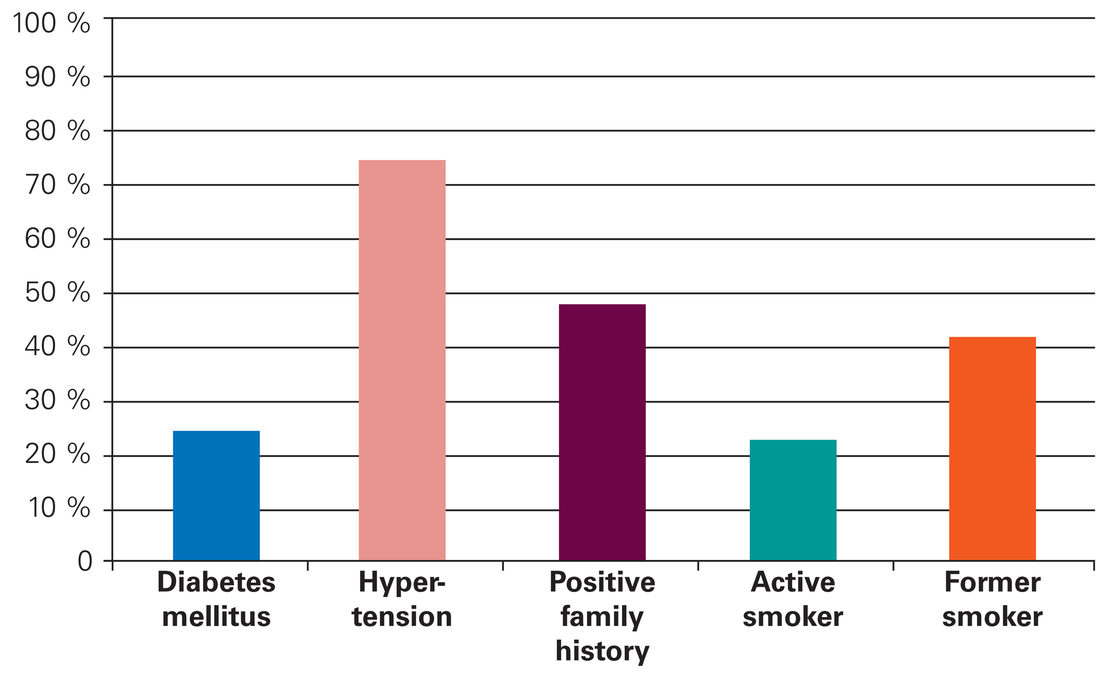
Pulse (bpm)	69	68	0,2327
HbA1c	6,7 %	6,7 %	0,1903
Exercise capacity (Watt)	106	118	< 0,0001
LDL-C goal <70 mg/dl (1,8 mmol/l)	22 %	43 %	< 0,001

Fig. 1: Risk factors of the ACS patients



CONCLUSION

Risk profil of pts with STEMI or NSTEMI improved in CR with significant more pts achieving LDL-C goal <70 mg/dl (1,8 mmol/l). TC, TG, PG and exercise capacity improved significantly and 88% of pts. could return in their full employment jobs.

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