



Annual Report

Heart Centre Varde

2008



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INTRODUCTION

Since 11 years Heart Centre Varde have been established as a well-functioning and highly specialized private hospital with focus on diagnostics and treatments of heart diseases.

Two cardiologists, two heart surgeons and 4 anaesthesiologists take care of the patient treatment together with 14 heart specialist consultants from university hospitals of Copenhagen, Odense and Aarhus. Consultants are chosen among the most superior specialists in their respective fields of cardiology and heart surgery.

The number of specialist nurses have been steadily increasing over the years. In 2008 the Heart Centre employ 38 specialist nurses and 2 perfusionists.

Heart Centre Varde is focused on optimum treatment quality to all heart patients, high efficiency and on fulfilling the treatment standards given by the Danish National Health Board.

In 2008 focus have been on education, especially in treatment of heart arrhythmias. A Fellow position have been established and have been occupied by a cardiology specialist from Umeaa, Sweden and later by a cardiology specialist from Aarhus University Hospital, Skejby, who missed this particular educational element to become a full-faceted specialist in the field of treatment of cardiac arrhythmias. Further, master class courses have been organized for cardiologists from Scandinavia and Balticum with focus on catheter based treatment of cardiac arrhythmias.

Together with the university hospitals Heart Centre Varde participates in national and international clinical studies on PCI and arrhythmia treatment. From 2006 to 2008 Heart Centre Varde together with Dept. Cardiology B, Aarhus University Hospital, Skejby supported a Ph.D.-study in the area of electrophysiology. The Ph.D.-thesis was defended successfully in March 2009.

PATIENT POPULATION

A total of 2196 patients were treated at Heart Centre Varde during 2008 with 462 heart operations (CABG and valve operation), 357 PCI procedures and 966 radiofrequency ablations. Further, 411 patients underwent diagnostic coronary angiography.

Referral criteria, treatment indication and patient composition was not different from other established heart centres in Denmark.

Further, a high number of diagnostic echocardiography, stress tests and cardiac CT-scans was performed.

Procedure	Number of patients			
	Total	Public		Private/ Insurance/ Scandinavia
PCI (balloon/stent)	357	298 (83,5 %)	59	(16,5 %)
Coronary angiography	411	280 (68,1 %)	131	(31,9 %)
Radiofrequency ablation	966	747 (77,3 %)	219	(22,7 %)
Heart surgery	462	421 (91,1 %)	41	(8,8 %)
Total	2196	1746 (79,5 %)	450	(20,5 %)

Table 1

In 2008 1746 (79,5 %) of all patients were referred from the public health care system and 450 (20,5 %) were referred on the basis of private health insurance from Denmark or from other Scandinavian countries.

HEART SURGERY

A total of 462 operations were performed: 260 CABG, 200 heart valve operations (with or without concomitant CABG), one myxoma was excised and one atrial septum defect was closed.

Procedure	Number
CABG only	260
Valve surgery	133
Valve surgery + CABG	67
Other	2
Total	462

Table 2: Number of heart surgery procedures 2008

CABG only

Median age was 66 years (42-87 years) with an average logistic Euroscore of 3.6 % (1-28 %). From receiving the referral and until operation, median waiting time was 15 days (0-104 days). Three patients preferred for private reasons to have their operations postponed for a longer periode. As can be seen from Table 3, 235 patients (90.4 %) were operated within one month from referral, and only 1.1 % waited more than two months.

Waiting time	Number	Percentage
≤ 1 week	82	31,5 %
≤ 2 weeks	139	53,4 %
≤ 1 month	235	90,4 %
1- 2 months	22	8,5 %
> 2 months	3	1,1 %

Table 3: Waiting time for CABG

Hospitalization time

Hospitalization time is calculated from day of operation and until leaving hospital. Median hospitalization time was 6 days (2-54 days) (Table 4). The vast majority (95,8 %) went directly home, 10 patients returned to their referring hospital before coming home and only one single patient needed further specialist treatment in another institution.

Hospitalization time	Number	Percentage
≤ 5 days	121	46,5 %
≤ 7 days	239	91,9 %
≤ 9 days	253	97,3 %
> 9 days	7	2,7 %

Table 4: Hospitalisation time, CABG

Of all patients 91.9 % went home within 7 days after CABG and only 7 patients (2.7 %) stayed more than 9 days at hospital.

Complications

Of all patients 95 % (247 patients) left intensive care unit the first morning after CAGB. Only one patient (0.4 %) needed more than 72 hours in ICU.

CABG	Number	Percentage	95 % C.I.
Time at ICU			
• < 24 hours	247	95 %	(91,5-97,3 %)
• 24-72 hours	12	4,6 %	(2,4-7,9 %)
• >72 hours	1	0,4 %	(0-2 %)
Perioperative MI	1	0,4 %	(0-2 %)
Atrial fibrillation (AF)	64	24,6 %	(19,6-30,1 %)
Deep sternal infection	2	0,8 %	(0,1-2,7 %)
CNS (Apoplexia/TCI)	2	0,8 %	(0,1-2,7 %)
Dialysis	1	0,4 %	(0-2 %)
Reoperation (bleeding)	11	4,2 %	(2,1-7,4 %)
30 day mortality	1	0,4 %	(0-2 %)

Table 5: Complication after CABG

Cardiac

One patient (0.4 %) developed perioperative MI, judged from ST-segment changes and CK-MB/CK ratio. Episodes of new developed atrial fibrillation was observed in 64 patients (24.6 %). All went home in sinus rhythm.

Infections

Deep sternum infection was observed in 2 patients (0.8 %). Both were fully restituted during follow-up.

Neurology

Central nervous system damage was observed in two patients (0.8 %). Both are fully recovered during follow-up.

Renal

One patient (0.4 %) developed acute renal failure with need for dialysis.

Bleeding and need for transfusion

Eleven patients (4.2 %) underwent re-operation due to bleeding. Only 51 patients (19.6) received blood component transfusions.

Mortality

Mortality is based on our own data together with data from the Central Personal Register (CPR-Register). Criteria for registration is 30-days mortality – no matter the cause – after treatment at Heart Centre Varde.

Among 260 patients undergoing CABG only one patient died (0.4 %) within 30 days.

Valvular surgery

Among 133 patients referred for isolated valvular surgery, 107 patients were referred for aortic valve surgery, 19 for mitral valve surgery and 7 patients for combined aortic and mitral valve surgery. Median age was 68 years (37-89 years).

Euroscore

Average logistic Euroscore was 6.4 % (1-27 %).

Waiting time

Waiting time is defined as the period of time from receiving the referral letter and until time of operation. Median waiting time was 15 days (0-79 days).

According to Table 1, 102 patients (76.7 %) was operated within one month from referral and only 7 patients (9.3 %) waited for more than 2 months.

Waiting time before operation	Number	Percentage
≤ 1 month	102	76,7 %
1- 2 months	24	31,9 %
> 2 months	7	9,3 %

Table 1: Waiting time before valvular surgery

Hospitalization time

Median hospitalization time was 7 days (4-42 days) (Table 2). In total 75.9 % of patients went home after a maximum of 7 days hospitalization and only 7 patients (5.3 %) were hospitalized more than 9 days. Out of 132 patients, 122 patients went home directly whereas 10 patients were revisited for further rehabilitation in other institutions before going home.

Hospitalization time	Number	Percentage
≤ 5 days	30	22,6 %
≤ 7 days	101	75,9 %
≤ 9 days	126	94,7 %
> 9 days	7	5,3 %

Table 2: Hospitalization time, valve surgery

Complications

Of 133 patients, 128 (96.2 %) left ICU the first morning after operation and only 3 patients (2.3 %) stayed at the ICU more than 72 hours.



Valvular surgery	Number	Persantage	95 % Confidence intervals
Time at ICU:			
• < 24 hours	128	96,2 %	(91,4-98,8 %)
• 24-72 hours	2	1,5 %	(0,2-5,3 %)
• >72 hours	3	2,3 %	(0,5-6,5 %)
Perioperative MI	0	0,0 %	(0-2,7 %)
Atrial fibrillation (AF)	40	30,1 %	(22,4-38,6 %)
Deep sternal infection	0	0,0 %	(0-2,7 %)
Damage to central nervous system	1	0,8 %	(0-4,1 %)
Dialysis	1	0,8 %	(0-4,1 %)
Reoperation due to bleeding	4	3,0 %	(0,8-7,5 %)
30 days mortality	0	0,0 %	(0-2,7 %)

Table 3: Complication, valve operations

Cardiac

No patients developed perioperative MI, judged from ST-segment changes and CK-MB/CK ratio. Episodes of new developed atrial fibrillation was registered in 40 patients (30.1 %), all in sinus rhythm when leaving the heart centre.

Infection

No deep sterna infections or other serious infections were observed.

Neurology

One patients experienced a transitory cerebral ischemic event (0.8 %).

Renal

One patients needed postoperative dialysis due to acute renal failure (0.8 %).

Bleeding and need for transfusions

Re-operation was needed in 4 patients (3.0 %). A total of 34 patients (25.6 %) needed transfusion with blood elements.

Mortality

Mortality is calculated from institutional database and the National Central Personal Registry. Criteria for registration is mortality within 30 days after operation, no matter the cause. Among 133 operated patients the 30 days mortality was 0 (zero).

Combined valvular and CABG surgery

Among a total of 67 patients, 54 underwent CABG combined with aortic valve surgery and 13 CABG combined with mitral valve surgery. Median age was 72 years (49-87 years).

Euroscore

Mean logistic Euroscore was 8.6% (2-50 %).

Waiting time

Median waiting time from referral to operation was 19 days (3-49 days).

Waiting time to operation	Number	Persantage
≤ 1 month	56	83,6 %
1- 2 months	11	16,4 %
> 2 months	0	0

Table 4: Waitingtime, combined valvular and CABG surgery

Hospitalization time

Median hospitalization time was 7 days (2-18 days) (Table 5). Sixty patients went directly home whereas 4 patients returned to the referring hospital for rehabilitation. Four patients (4.5 %) died within 3 months postoperatively.

Hospitalization time	Number	Persantage
≤ 5 days	13	19,4 %
≤ 7 days	44	65,7 %
≤ 9 days	60	89,5 %
> 9 days	7	10,4 %

Table 5: Hospitalization time, combined valve and CABG surgery

Complications

Fifty seven patients (85.1 %) left ICU within 24 hours and only two patients (3 %) stayed in ICU for more than 72 hours.

Combined valvular and CABG	Number	Persantage	95 % Confidence intervals
Time at ICU:			
• < 24 hours	57	85,1 %	(74,3-92,6 %)
• 24-72 hours	8	11,9 %	(5,3-22,2 %)
• >72 hours	2	3,0 %	(0,4-10,4 %)
Perioperative MI	0	0,0 %	(0-5,4 %)
Atrial fibrillation (AF)	16	23,9 %	(14,3-35,9 %)
Deep sternal infection	1	1,5 %	(0-8 %)
Central nervous system damage	1	1,5 %	(0-8 %)
Dialysis	3	4,5 %	(0,9-12,5 %)
Reoperation due to bleeding	6	8,9 %	(3,4-18,5 %)
30 days mortality	3	4,5 %	(0,9-12,5 %)

Table 6: Complications, combined valvular and CABG surgery

Cardiac

None of the patients experienced perioperative MI judged from ST-segment changes and CK-MB/CK ratio. Sixteen (23.9 %) of the patients experienced new-developed atrial fibrillation. All patients left the Heart Centre in sinus rhythm.

Respiratory

Two patients developed multi-organ failure with respiratory insufficiency and need for temporary respirator support.

Infection

One patient developed deep sternal infection.

Neurology

One patient (1.5 %) developed signs of central nervous system damage, but with 100 % restitution.

Renal

Three patients developed acute renal insufficiency with need for dialysis.

Bleeding and transfusion need

Re-operation due to bleeding was done in 6 patients (8.9 %). Transfusion of blood products was needed in 24 patients (35.8 %).

Mortality

Data are based on institutional registry together with the Central Personal Register. Registered are deaths by all reasons within 30 days postoperatively. Three deaths (4.5 %) were observed. This number is significantly less than expected from a mean logistic Euroscore of 8.6 %.

PERCUTANEOUS CORONARY INTERVENTION (PCI)

Of all patients treated by PCI, 83.5 % were referred from public hospitals. The remaining 16.5 % were covered by private health insurance or covered the expenses themselves.

PCI, number of patients (357)				
Regions		Public		Health insurance/Private
South	202	56,6 %	9	2,5 %
Mid	25	7,0 %	10	2,8 %
North	4	1,1 %	0	0,0 %
Sealand	55	15,4 %	15	4,2 %
Copenhagen	12	3,4 %	14	3,9 %
Scandinavia	0	0,0 %	11	3,1 %
Total	298	83,5 %	59	16,5 %

Table 1: Number and regional distribution of PCI patientes

A total of 353 patients were electively treated with PCI, 259 (72.5 %) men and 98 women. Mean age was 64 years (36-89 years).

Procedures and complications

A mean of 1.5 stents/patient were implanted (1-6 stents/patient). No serious complication (MI, malignant arrhythmias, acute operations or deaths) were observed.

RADIOFREQUENCY ABLATION

A huge increase in radiofrequency ablation activity was noted during 2008, with a total of 966 procedures.

Public hospitals referred 746 (77.3 %) patients and 218 (22.6 %) were covered by private health insurances or paid by them self. A significant number of patients – 125 (12.9 %) – came from Norway, Sweden and Finland (Table 1). Median age was 57.7 years (10-81 years), 687 men (72.2 %) and 269 women.

RFA, number of patients (966)				
	Public		Insurance/Private	
South	224	23,2 %	24	2,5 %
Mid	249	25,8 %	26	2,7 %
North	34	3,5 %	7	0,7 %
Sealand	79	8,2 %	15	1,6 %
Copenhagen	161	16,7 %	22	2,3 %
Sweden	0	0 %	59	6,1 %
Norway	0	0 %	62	6,4 %
Finland	0	0 %	2	0,2 %
Other countries	0	0 %	2	0,2 %
Total	746	77,3 %	218	22,6 %

Table 1: Number and regional distribution of RVA patients

Complications

Hemodynamical significant pericardial effusion (tamponade) was treated in 6 patients (1 % of procedures requiring transseptal puncture). Evacuation of pericardial effusion was done in all cases without long-term sequelae. No other complications was observed except for minor haematomas at puncture sites. No fatal complications and no tromboembolic complications were observed.

