Report of the Database Committee

19th Congress on Cardio-Thoracic Surgery 2014

November 22th, 2014 | Provinciehuis - Leuven, Belgium
The database committee has no disclosures
BACTS DBC members

- Laurent De Kerchove
- Erik de Worm
- Herbert Gutermann
- Steven Laga
- Wouter Oosterlinck
- Matteo Pettinari
- Tine Philipsen
- Mark Radermecker
- Paul Sergeant
- Constantin Stefanidis
- Bernard Stockman
- Yves Van Belleghem

- Liesbeth Bruckers
- Dries Gaerdelen
- Carine Vandeweyer
BACTS DBC 2014

- DBC meetings : 4 (5)
- Board meetings
- 2nd year atrial fibrillation registry report
- Report 2011
- Report 2012-13 draft

BACTS Atrial Fibrillation Management Database

Report 2y after reimbursement - BACTS database committee
BACTS Registry

- New registry 2012
- EACTS dataset version 1.0
- FMP application
BACTS registry: participation

- 2012 (N=12067): 27 centers – 1 missing
  - Cliniques de L’Europe Ste Elisabeth
- 2013 (N=10454): 24 centers – 4 centers missing, some centers partial data (+/-1600 pts)
  - UZ Brussel
  - Cliniques de L’Europe Ste Elisabeth
  - CHU Brugmann Huderf
  - CHU de Liège Sart Tilman
Upload: www.bactsregistry.org
<table>
<thead>
<tr>
<th>Datum/tijd</th>
<th>Type</th>
<th>Beschrijving</th>
</tr>
</thead>
</table>
| 05/11/2014 15:19:16| upload | **Result:** 15 rows saved into the database  
313 rows skipped, already in the database  
0 rows skipped, due to errors |
| 05/11/2014 14:31:16| upload | **Result:**  
0 rows saved into the database  
313 rows skipped, already in the database  
15 rows skipped, due to errors |

Data specifications can be found [through this link](#).

Row 3 : The column 'Other procedures cardiac' is obligatory and should be filled in in all rows
Row 4 : The column 'Other procedures cardiac' is obligatory and should be filled in in all rows
Row 5 : The column 'Other procedures cardiac' is obligatory and should be filled in in all rows
Row 6 : The column 'Other procedures cardiac' is obligatory and should be filled in in all rows
Row 10 : The column 'Other procedures non cardiac' is obligatory and should be filled in in all rows
Row 11 : The column 'Other procedures non cardiac' is obligatory and should be filled in in all rows
Row 53 : The column 'Other procedures non cardiac' is obligatory and should be filled in in all rows
Row 105 : The column 'Gender' is obligatory and should be filled in in all rows
Row 120 : The column 'Number of previous heart operations' is obligatory and should be filled in in all rows
Unfortunately something went wrong!

A detailed error message was sent to the webmaster, the problem will be fixed as soon as possible.
BACTS registry participation

• Full dataset 2012
  – EuroSCORE fields 17 centers
  – Postoperative complications 13 centers 36,5%
  – Status at discharge 14 centers 41,5%
  – Status at follow-up 13 centers 31,0%

• Minimal dataset 2012: 10 centers

• Full dataset 2013
  – 2012 centers + One center
**COPD 2012**

- 17/27 participating
- Missing
- Blanc
- No/none
BACTS REGISTRY

• BACTS-DBC aims for completeness
  – All centers
  – All patients
  – All fields
  – Avoid blancs

• Minimal dataset is not enough
  – PATIENT ID, BIRTH, GENDER, SURGEON 1, (date of) SURGERY, REDO, PROCEDURE, OTHER CARDIAC DETAIL, NON CARDIAC DETAIL.

• Full dataset = EACTS standard = minimal
BACTS registry 2012 (n=12067) 27 centers
BACTS registry 2013 (n=10454) 24 centers

- Mean age: 66.6
- Male 66.5%
- Redo: 7.6%
Evolution 2001-2013

cardiac operations
Evolution 2001-2013

- thoracic aorta
- valve + CABG + other
- valve + CABG
- Valve + other
- valve only
- CABG + other
- isolated CABG

BACTS
### Statistics for 2013

#### Averages for your hospital

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average age</td>
<td>67.933</td>
</tr>
<tr>
<td>Percentage men</td>
<td>69%</td>
</tr>
<tr>
<td>Percentage female</td>
<td>31%</td>
</tr>
</tbody>
</table>

#### Procedure types

- CAB alone: 280 (39.7%)
- Valve alone: 171 (24.2%)
- CAB & valve: 70 (9.9%)
- CAB & other: 26 (3.7%)
- Valve & other: 80 (11.3%)
- CAB & valve & Other: 30 (4.2%)
- Other: 49 (6.9%)
- Total: 706 (100%)

#### Redo types

- None: 641 (90.8%)
- One: 59 (8.4%)
- Two: 4 (0.6%)
- Three: 2 (0.3%)

#### Other cardiac detail

- None: 602
- Left ventricular aneurysm repair: 7
- Ventricular septal defect: 14
- Atrial septal defect: 11
- Balista: 0
- Surgical Ventricular Restoration: 3
- Congenital: 0
- Transmyocardial laser revascularisation: 0
- Cardiac trauma: 0
- Cardiac transplant: 0
- Permanent pacemaker: 0
- AICD: 0
- Epicardial lead: 1
- AF Ablation surgery: 0
- Surgical Maze: 0
- Septal Myectomy: 0
- Cardiac tumor: 0
- Acute pulmonary embolectomy: 0
- Pulmonary endarterectomy: 0

#### Averages for all hospitals

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average age</td>
<td>66.25</td>
</tr>
<tr>
<td>Percentage men</td>
<td>69.6%</td>
</tr>
<tr>
<td>Percentage female</td>
<td>30.4%</td>
</tr>
</tbody>
</table>

#### Procedure types

- CAB alone: 4542 (43.4%)
- Valve alone: 2347 (22.5%)
- CAB & valve: 1174 (11.2%)
- CAB & other: 271 (2.6%)
- Valve & other: 636 (6.1%)
- CAB & valve & Other: 197 (1.9%)
- Other: 1287 (12.3%)
- Total: 10454 (100%)

#### Redo types

- None: 9650 (92.3%)
- One: 647 (6.4%)
- Two: 92 (0.9%)
- Three: 29 (0.3%)
- Four: 7 (0.1%)
- Five: 2 (0.0%)

#### Other cardiac detail

- None: 8824
- Left ventricular aneurysm repair: 31
- Ventricular septal defect: 23
- Atrial septal defect: 131
- Balista: 0
- Surgical Ventricular Restoration: 8
- Congenital: 277
- Transmyocardial laser revascularisation: 0
- Cardiac trauma: 10
- Cardiac transplant: 54
- Permanent pacemaker: 153
- AICD: 90
- Epicardial lead: 37
- AF Ablation surgery: 200
- Surgical Maze: 35
- Septal Myectomy: 75
- Cardiac tumor: 48

#### Total: 10454 (100%)
EACTS ADULT CARDIAC DATABASE PROJECT

Results of pilot online interactive database

Domenico Pagano- Chair QUIP
Theo De By- Manager Database Project
To produce updated clinical guidelines
To agree best practice documents
To develop benchmarking tools to monitor and improve quality:
  - Through data collection
  - Creation of near real time interactive data analysis tools
  - Clinical decision support facilities
EACTS Adult Cardiac Database (2003-2010)

- Based on Consolidated National Datasets
- Published in paper format

Issues:
- Mostly historical data
- Not frequently updated
- Not specific enough
QUIP ADULT CARDIAC DATABASE

- Unit based data
- Directly from Unit’s database
- Mapped on QUIP Dataset (purposely constructed)
- Create an easily accessible and interactive online database
STRUCTURE

Unit Database → QUIP Dataset → Online Interactive Database
QUIP Database

- Benchmarking Tool
  - Adult Cardiac Surgery Outcomes
- Clinical Decision Guide
  - Compare individual patient profiles and outcomes in dataset
- Reports
  - Standard and bespoke unit reports

Design
Online tool structured in three layers

First page shows an overview of the hospital performance

Filters enable the user to select the time period or the type of procedures shown in the graph.

Data in the graph can be shown for each procedure group.

Each hospital is shown as a dot in the graph.

The user can select the indicator shown in each axis.
Second page enables the user to compare hospitals on a single indicator.

Select Indicator
- Volume of procedures
- In Hospital mortality rate (%)
- Re-operation rate (%)
- Average length of hospital stay (days)
- Average pre-op length of stay (days)
- Average post-op length of stay (days)

Drop-down list to select the desired indicator

Filters enable the user to select the procedure viewed in the graph

Time trend graph to show performance over time
Third page shows patient characteristics for each hospital.

User can select the patient characteristics to compare.

Values for % of patients with Chronic Lung Disease for each procedure group and hospital.
Users can export the table in excel or the graphs to use in presentations/reports.
QUIP EACTS

- EACTS dataset updated
  - 15 new fields
  - 4 fields modified

- BACTS dataset
  - EACTS dataset: version 1,0
  - New fields: are optional
  - FMP-users: updated with the new fields
Databases
Limitations and pitfalls

- Risk confidentiality
- Confidence limits/ correction for complexity and comorbidity
- Fraud en misuse

- Database committee is the custodian
  – Memory of Understanding
Return on investment

• Improvement of functionality of the website
  – Benchmark

• Facilitate participation in EACTS-QUIP
  – Update FMP
BACTS registry: 12 FMP users

- CHU Brugmann, Bruxelles
- ASZ, Aalst
- Imelda, Bonheiden
- Hôpital de Jolimont, Haine St Paul
- Grand Hôpital de Charleroi, Gilly
- CHR De La Citadelle, Liège
- ZNA Middelheim, Antwerpen
- CL St Jean, Bruxelles
- UZ Brussel, Brussel
- CHR de Namur, Namur
- Jessa Ziekenhuis, Hasselt
- UZAntwerpen, Edegem
EACTS Congenital Database

Gold Standards

Selection criteria

Age group: All
Hospital: All
Year: 2012
5 best hospitals by: Not selected
Selected procedures: All
Case category name: All
Continents: All

Values of the selection

<table>
<thead>
<tr>
<th>No of cases</th>
<th>% of all</th>
<th>Min</th>
<th>Mean</th>
<th>Stdev</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPPV (hour)</td>
<td>281</td>
<td>83.38%</td>
<td>1</td>
<td>63.70</td>
<td>141.27</td>
</tr>
<tr>
<td>Total CPB time (min)</td>
<td>245</td>
<td>100.00%</td>
<td>7.00</td>
<td>103.40</td>
<td>57.87</td>
</tr>
<tr>
<td>Total Aortic X time (min)</td>
<td>222</td>
<td>90.61%</td>
<td>7.00</td>
<td>61.36</td>
<td>34.86</td>
</tr>
<tr>
<td>Circulatory arrest (min)</td>
<td>3</td>
<td>0.82%</td>
<td>2.00</td>
<td>2.50</td>
<td>0.71</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>337</td>
<td>100.00%</td>
<td>0.50 kg</td>
<td>16.95 kg</td>
<td>20.59 kg</td>
</tr>
<tr>
<td>Age at operation (months)</td>
<td>326</td>
<td>99.70%</td>
<td>0.03</td>
<td>61.73</td>
<td>110.83</td>
</tr>
<tr>
<td>LOS (days)</td>
<td>335</td>
<td>99.41%</td>
<td>1.00</td>
<td>14.42</td>
<td>15.26</td>
</tr>
</tbody>
</table>

BACTS
Atrial Fibrillation Registry

**Patients**

<table>
<thead>
<tr>
<th>Date</th>
<th>PRE</th>
<th>POST</th>
<th>MOD</th>
<th>FUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>18/01/2012</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17/04/2012</td>
<td>74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20/02/2014</td>
<td>149</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>362</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3 records found

Starting from 1st of November there is a regulation for the reimbursement of the disposable probes for concomitant atrial fibrillation ablation.

The number of devices used during the current year is 580

The registry for the reimbursement of the disposable probes consist of three parts:

**Pre-operative form:** to be filled in before discharge of the patient

**Procedural form:** to be completed within one month after the procedure

**Follow-up form:** 3 follow-ups during two years (one echocardiography and one holter)

The first two parts have to be completed for reimbursement. As proof of completion two receipt numbers will be given.


**Inclusion criteria**

- Concomitant surgical treatment of documented atrial fibrillation in combination with one of the following 229014-229025,229515-229526,229574-229585,229695-229603,229611-229622,229633-229644

**Exclusion criteria**

- Permanent atrial fibrillation > 5 years
- Left atrial diameter > 55 mm (parasternal long axis view)
- Percutaneous ablation for atrial fibrillation during same admission
Report AFIB

• Akkoordverklaring/déclaration d’accord disposable probes: 01.11.2011 - 31.12.2015
  – Beknopt rapport sommaire: 31/12/2012
  – Tussentijds rapport intermédiaire: 31/12/2013
  – Beknopt rapport sommaire: 31/12/2014
  – Eind rapport final: 1/4/2015
BACTS atrial fibrillation management database

Follow-up

- Follow-up: 80% needed – center reimbursement suspended – adhesion of center to agreement expires
- Three year report by end 2014: we need the follow up data

- WE NEED THE FOLLOW-UP for the final report April 2015: future reimbursement will depend on this
BACTS atrial fibrillation management database

Follow-up

• Mandatory 2 years
  – 3 FU
  – 1 Echocardio and 1 holter

• We propose three follow-up visits during two years
  – first follow up at 6 months (+/- 2 months), with echo and holter
  – second follow up at 12 months (+/- 2 months)
  – third follow up at 24 months (+/- 3 months)
BACTS atrial fibrillation management database
Final report

• Inclusion
  – 1 nov 2011 – 31 okt 2014

• Follow-up
  – Closure date: dec 31
  – Reminder:

• Proposal for reimbursement
• Thank you for the data
• Please send your data
  – All patients
  – All fields
• Remind the follow-up
• Send your feedback/suggestions
  – BACTS registry
  – Exel upload
  – Belgian Atrial Fibrillation Management Database
  – Report, query's