BWGIC Activity report 2014

Quality control in percutaneous coronary intervention (PCI) and trans-catheter aortic valve implantation (TAVI)

The project was to contribute to control and to improve the quality in interventional cardiology. Two types of interventional procedures with proven clinical efficacy were more particularly evaluated: PCI and TAVI.

PCI

PCI (percutaneous coronary intervention) is a well-established interventional procedure that represents the routine "historical" activity of B2 and B2/B3 centers. This activity is monitored by the BWGIC since 1996, but the transfer of the database from BWGIC to QERMID in 2012 has considerably modified the practicability and the quality of this peer review.

In 2014, the BWGIC organized a peer review of PCI activity performed in 2013 oriented toward:

- -collection of a minimal data set of activity parameters from all centers
- -evaluation of the appropriateness of PCI in a (random) sample of 10 centers

Results of this peer review are reported below. Obviously and unfortunately, due to the impossibility to extract data from QERMID, this peer review requested considerably more efforts and provided less information than similar peer reviews performed in previous years when the database was owned by the BWGIC.

Additionally, representatives of the BWGIC actively participated to discussions with the QERMID team in 2014 in order to optimize the quality of data entered in the QERMID database, to improve the transfer of data (system to system connections) and to develop applications allowing extraction of data and benchmarking. Unfortunately, to date (June 2015) no access to any data is provided to BWGIC or to the College of Cardiology.

TAVI

TAVI (trans-catheter aortic valve implantation) is performed in most interventional centers although partial reimbursement is restricted to a limited number of centers in selected situations. From the beginning of this activity, a Belgian data base has been developed on a voluntary basis. As it was done previously for PCI, the BWGIC wanted to move to a web-based application allowing collection of data from all centers ; the objective is to collect data from all TAVI procedures (whether

reimbursed or not) in order to evaluate the progression of the technique in Belgium, the selection of patients, quality indicators and patients' outcome.

BWGIC has created a "percutaneous valve task force" that actively collaborated with the Belgian association for cardiothoracic surgery (BACTS). The items to be collected were discussed and a digital platform was developed in collaboration with Lambda+. This platform was presented to representatives of INAMI/RIZIV. Completion of database is linked to (partial) reimbursement for the selected centers but all centers (including those that are not selected for conditional reimbursement) are encouraged to enter their data. An interim report will be presented to INAMI/RIZIV by the BWGIC and BACTS in December 2015.

Peer review of PCI in Belgium

History of PCI peer review

The Belgian working group on interventional cardiology (BWGIC) of the Belgian society of cardiology took the initiative to collect data from interventional procedures since 1996. Data collection was done by fax in the first years (1996-2003) then in a web-database hosted by the European society of cardiology from 2003 to2012. This data base allowed extensive peer review and benchmarking with other Belgian and European centers.

In 2012, the PCI database that was previously managed by the BWGIC was transferred to the QERMID system. Among the promises linked to this transfer was the possibility of a validation of mid- and long-term mortality data by a link with national registry. The absence of validation of mortality was indeed a weak point of the previous database that otherwise allowed extensive statistics, peer review and benchmarking between centers in Belgium and in Europe.

Early after this transfer, the BWGIC was informed that the QERMID application had been launched without any possibility to extract data, making peer review and -even basic- counting or statistics impossible. Three years later, very few progresses have been made from QERMID and BWGIC is still waiting for the possibility to obtain information about PCI activity. Even a simple request such as the number of PCI done in Belgium could not be fulfilled. Discussions between representatives of BWGIC and QERMID are underway to improve this situation.

Methods

The board of BWGIC decided to organize under two aspects:

1. Collection of basic data on 2013 PCI activity in each center:

- Number of Coronary angiograms in 2013
- Number of PCI procedures in 2013
- Number of FFR measurements done (total number of cases in 2013)
- Number of urgent CABG after PCI (unscheduled CABG surgery within 48 hours of PCI for failure or complication or incomplete result of the index procedure)
- Number of interventional cardiologists having done >100 PCI/year in 2013

2. Review of 10 clinical dossiers from 10 centers addressing the “appropriateness” of PCI.

Selection of centers and of patients was done randomly. All centers were contacted by email; all did provide the requested information.

Main information

1. Collection of basic data on 2013 PCI activity

Number of Coronary angiograms in 2013	63422
Number of PCI procedures in 2013	24230
Number of FFR measurements done (total number of cases in 2013)	5579
Number of urgent CABG after PCI (unscheduled CABG surgery within 48 hours of PCI for failure or complication or incomplete result of the index procedure)	86
Number of interventional cardiologists having done >100 PCI/year in 2013	120

2. Appropriateness of PCI

All dossiers and angiograms were reviewed. The 100 PCI procedures included 49 stables angina and 51 acute coronary syndromes (25 STEMIs). 105 segments were dilated; PCI was successful in 98/105 segments. A PCI was considered "clinically justified" in two situations:

- Angina *OR* positive non-invasive test of ischemia *AND* stenosis >50%
- Stenosis >70% *OR* FFR ≤0.80 independently of symptoms or signs of ischemia

Among the 105 dilated segments, 94 were clinically justified; for 11 segments, PCI was either not justified or incompletely documented. This proportion could probably be further reduced by a more extensive review of clinical dossiers that would require a site visit. Overall, the FFR seems underused in some borderline situations. Insufficiency of FFR reimbursement is the most likely explanation for this finding.

Specifically, in patients with stable angina (or equivalent) a non-invasive test for ischemia was performed in 25/49 (negative test in 6 of them) and not done in 24/49. The majority of elective PCI was thus performed without objective proof of ischemia (although not all of them inappropriately).

Future developments and expected improvements

BWGIC hopes that access to QERMID data will be available in the next months. This will provide feedback to centers on their activity and allow benchmarking and quality control.

A link with official mortality data would be essential to validate long-term outcome. An estimation of mid-term and long-term mortality based on spontaneous report by the cardiologist is unrealistic and unreliable.

Future adaptations and upgrades in the QERMID database should only be made in close collaboration with BWGIC representatives.

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