

APPENDICES

Appendix 1. Characteristics of the databases comprising the EU-ADR network

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Appendix 2. Standardised questionnaire for the validation of potential cases of acute myocardial infarction identified from EHR databases

Appendix 1. Characteristics of the databases comprising the EU-ADR network

CHARACTERISTICS	Pedianet (Italy)	HSD (Italy)	Lombardy Regional (Italy)	Tuscany Regional (Italy)	IPCI (Netherlands)	PHARMO (Netherlands)	QRESEARCH (UK)	Aarhus (Denmark)
Current source population	160 000 children	1 500 000	11 000 000	4 000 000	1 500 000	3 000 000	4 000 000	2 000 000
Years covered for this study	2003-2009	2003-2009	2003-2008	2003-2006	1996-2010	1998-2009	2000-2007	2001-2009
Type of database	General Practice pediatric database	General Practice database	Administrative	Administrative	General Practice database	Hybrid (administrative and medical record/registries)	General Practice database	Administrative
Age range	0-14	From 15 onwards	All ages	All ages	All ages	All ages	All ages	All ages
% Males	52.2	47.2	48.8	48.1	49.6	45.8	49.6	49.9
Demographic information available								
Date of registration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Date of transferring out	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Date of birth	MM-YY	MM-YY	DD-MM-YY	DD-MM-YY	MM-YY	DD-MM-YY	YY	MM-YY
Sex	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity/Race	No	No	No	No	No	No	No	No
Drug information available								
Product coding	MINSAN	MINSAN	MINSAN	MINSAN	HPK	Z index	EMIS	VAerets
Active international principle coding system	ATC	ATC	ATC	ATC	ATC	ATC	BNF	ATC
Date of prescription/dispensing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dosing regimen	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Quantity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Indication of use	Yes	Yes	No	No	Yes	Yes for in-hospital	No	Yes

Outcome information available								
Symptoms (Yes/No)	Yes, as free text/codes	Yes, as free text/codes	No	No	Yes, as free text/codes	Yes for some	Yes, as codes	No
Outpatient primary care diagnoses	Yes, as free text /codes	Yes Free text /codes	No	No	Yes, as free text /codes	No	Yes	No
Outpatient specialist care diagnoses	Yes, as free text/codes	Yes	No	No	Yes	No	Yes	No
Hospital discharge diagnoses	Yes, as free text /codes	Yes, as free text /codes	Yes	Yes	Yes, as free text /codes	Yes	Yes	Yes
Diagnosis coding scheme	ICD-9CM	ICD-9CM	ICD-9CM	ICD-9CM	ICPC	ICD-9CM	RCD	ICD-10
Diagnostic procedures	Yes	Yes	Yes	Yes	No	Yes for in-hospital interventions	Yes	Yes, in-hospital only
Laboratory tests	Yes	Yes	No	No	Yes	Yes subset	Yes	Yes, in-hospital only

Legend:

ICPC: International Classification of Primary Care

ICD9-CM: International Classification of Diseases – 9th revision Clinical Modification

RCD: READ CODE Classification

ICD-10: International Classification of Diseases – 10th revision

MINSAN: Italian Ministry of Health

APPENDIX 2. Free text search strings employed in the identification of cases of acute myocardial infarction in general practice (GP) databases

IPCI (Dutch)	HSD (Italian)
<i>"(myocard AND infarct) OR</i>	<i>"infarto miocardico acuto OR</i>
<i>(hart AND infar) OR</i>	<i>infarto%miocard%acut OR</i>
<i>(latera AND infar) OR</i>	<i>necrosi%miocard%acut OR infarto%lateral OR</i>
<i>(posterior AND infar) OR</i>	<i>infarto%infer% OR %infarto%transmur OR</i>
<i>(anterior AND infar) OR</i>	<i>infarto%anter OR infarto%poster OR</i>
<i>(septal AND infar) OR</i>	<i>infarto%subendocard"</i>
<i>(hart AND aanval) OR</i>	
<i>(Q- AND wave) OR</i>	
<i>(' ST ' AND verhog) OR</i>	
<i>(wand AND infar) OR</i>	
<i>(parde AND wave) OR</i>	
<i>' VWI ' OR ' AMI '"</i>	

APPENDIX 3. Standardised questionnaire for the validation of potential cases of acute myocardial infarction identified from EHR databases

Questionnaire for assessors

Based on the information reported in the medical definition, assessors should answer the following questions to be able to apply subsequently a validation algorithm:

Database: _____

ID Patient: _____

Sex: M/F

Birthdate: dd/mm/yyyy

Date of event as reported in the automated search: dd/mm/yyyy

Age: _____ years (calculated automatically with reference to the date of event)

Is there a medical record available for this patient? Yes/No

A) Information on characteristics and detection of AMI

1. Was there any mention of the presence of 'acute myocardial infarction' in the records reviewed? Yes/No
2. If (Answer to 1 is) YES, was the myocardial infarction referred to as 'old myocardial infarction' or 'history of myocardial infarction'? Yes/No
3. Was there an explicit mention of 'acute myocardial infarction' as a cause of death? Yes/No

For Questions 4-6, evaluate within 30 days of presumed index date [i.e., date of diagnosis]

4. Were any of the following interventions done? Multiple answers are possible:
 - Coronary artery bypass graft (CABG)
 - Percutaneous coronary intervention (PCI)
 - Thrombolysis (rTPA/streptokinase, others)
 - Initiation of long-term pharmacotherapy
 - None of the above
5. Were any of the following examinations done to confirm a suspicion of acute myocardial infarction? Multiple answers are possible:
 - Coronary angiography (specify findings if possible)
 - coronary occlusion
 - coronary obstruction
 - vessel narrowing
 - ruptured plaque
 - other, please specify _____
 - Electrocardiography (ECG) (specify findings if possible)
 - ST-segment elevation >1mm in 2 anatomically contiguous leads
 - new Q waves
 - new left bundle branch block (LBBB)
 - T wave inversion
 - Other, please specify _____

- Cardiac enzymes (specify values and units, if given)
 - Elevated levels of Troponin I _____
 - Elevated levels of Troponin T _____
 - Elevated levels of creatine phosphokinase-MB isoenzyme (CPK-MB) _____
 - Other, specify if possible _____
- None of the above

6. Were any of these signs or symptoms of myocardial ischemia recorded shortly on or before the date of diagnosis? Multiple answers are possible:

- chest, jaw or upper extremity pain at rest or with exertion
- difficulty breathing (dyspnea)
- excessive sweating (diaphoresis)
- fatigue/weakness
- epigastric pain
- none of the above
- other, please specify _____

B) Information about cardiovascular risk factors

1. Was there mention/evidence in the records of any of the following risk factors for acute myocardial infarction? Multiple answers are possible.

- Family history of myocardial infarction/cardiovascular disease
- Dyslipidemia
- Diabetes mellitus
- Hypertension
- Obesity
- Cigarette smoking
- None of the above

C) Information about potential alternative explanations for the signs/symptoms/laboratory findings

1. Was there mention/evidence in the records of any of the following diseases at the time of/before the diagnosis? Multiple answers are possible.

- Pericarditis and/or Cardiac Tamponade _____
- Myocarditis _____
- Aortic dissection _____
- Cardiac contusion _____
- Pneumothorax _____
- Pulmonary embolism _____
- Stable angina _____
- Unstable angina _____
- Gastroesophageal reflux disease (GERD) _____
- None of the above

Only for GP databases: Indicate if there was a confirmation of the diagnosis of acute myocardial infarction by:

- Specialist
- Hospital discharge records

Was there sufficient information available for validation? **Yes/No**

D) Date of the event:

For both hospital and GP databases: If it was clearly reported, indicate the date when the symptoms of AMI started (index date) _____

Only for hospital databases:

Based on the available information, when did the AMI start?

- During the hospital stay
- On the exact day of hospital admission
- Within the 7 days preceding the hospital admission
- Within one month preceding the hospital admission
- More than one month preceding the hospital admission
- Based on the available information, it is not possible to establish the exact date of the start of the AMI

E) In your opinion, was this a:

- CASE?
- NON-CASE?
- NON-ASSESSABLE CASE?

Other comments
