Patient self-report vs. medical records for monitoring cardiovascular conditions in patients with hypercholesterolemia

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Slide 1

HE1 Sollen wir hier die ganzen Institute eingeben - was meinst Du?
Heike Englert; 7/8/2008

Background

Major challenge in epidemiological research:

- ensuring the quality of the raw data generated for analysis

Epidemiological studies often rely on:

- self-administered questionnaires
- patient self-reports

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Objectives

- To what extent do patient self-reports accurately reflect the presence or absence of specific types of cardiovascular conditions?
- Do certain patient characteristics such as:
  - age and gender
  - education level
  - Overall health and choice of individual general practitioner

  influence the accuracy of self-reports on cardiovascular conditions as compared to medical records?

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Methods

- **Part of the ORBITAL project**
  - Epidemiological, randomized, multicenter, open-label, parallel-group study
  - April to November 2002 in Germany
  - Inclusion Criteria:
    - men and women ≥ 18 years of age
    - diagnosed hypercholesterolemia with an indication for treatment according to the Second Joint European Guidelines

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Methods

- **Medical records consisted of:**
  - Medical history (including cardiovascular diseases)
  - Use of lipid lowering drugs and/or other medication
  - History of invasive cardiac procedures over the last three months
  - Physical examination: weight, height and fasting blood sample to assess blood lipids
  - No inquiry was made about the frequency of consultations with other doctors, school degree or employment status.

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Methods

- **Patient self-reports consisted of:**
  - Socio-demographics
  - Overall health (history of myocardial infarction, angina, stroke, hyperlipidemia, hypertension, diabetes, cardiac arrhythmia, heart failure)
  - History of invasive cardiac procedures
  - Medication use over the past 4 weeks
  - Use of further medical resources (e.g. frequency of consultations)
  - Compliance with medication, lipid levels etc.

Demographics

	Men	Women
Age	60 ± 10	64 ± 10
Single and living alone (%)	12	30
Education >10 years (%)	21	10
Actively employed (%)	41	20
Type of employment		
mainly physical	56	56
mainly sitting	42	38
never worked	0	2
Questionnaires were filled out (%)		
by the patient	74	70
with assistance of a close person	22	25
of a close person only	2	3

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History of Disease

	Prevalence physician %	Prevalence patient %	Agreement %	Kappa CI low/high	Jaccard CI low/high
Family History MI	22	20	86	0.57 0.54/0.61	49 47/52
MI	8	17	90	0.55 0.51/0.59	43 40/46
Angina	1	17	83	0.04 -0.01/0.09	3 2/4
Stroke	3	4	96	0.44 0.35/0.53	30 25/35
Hypertension	62	56	85	0.69 0.66/0.71	77 76/78
Diabetes	23	20	96	0.89 0.86/0.92	84 82/86
Cardiac arrhythmia	2	7	94	0.3 0.22/0.38	19 16/23
Heart failure	3	4	95	0.29 0.20/0.38	19 15/23
CHD	71	69	86	0.66 0.63/0.68	81 80/82

History of Disease

	Under- reporting %	Over- reporting %
Family History MI	8	6
MI	1	10
Angina	1	17
Stroke	1	2
Hypertension	10	5
Diabetes	3	1
Cardiac arrhythmia	0.3	6
Heart failure	2	3
Coronary Heart Disease	8	6

Factors associated with over- /underreporting

	Male gender	Age	Education level	Health Status	Individual general practitioner
MI					
underreporting	n.s.	n.s.	n.s.	n.s.	43%**
overreporting	+277% ***	+17%***	n.s.	-13%***	29%***
Stroke					
underreporting	n.s.	n.s.	n.s.	n.s.	n.s.
overreporting	+41%***	+21%**	n.s.	-12%*	+19%***
Hypertension					
underreporting	n.s.	+27%***	-14%***	n.s.	8%**
overreporting	+52%***	-11%**	n.s.	-10%*	16% ***
Diabetes					
underreporting	n.s.	n.s.	n.s.	n.s.	18%***
overreporting	n.s.	n.s.	n.s.	n.s.	22%***
Cardiac arrhythmia					
underreporting	n.s.	n.s.	n.s.	n.s.	n.s.
overreporting	+26%**	+44%***	+7%*	-23%***	+14%***

Limitations

- **Applicability to patients with hypercholesterolemia**
- **Assessment of validity**
  - medical record may not be considered as a gold standard

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Strength

- **A total of 7640 patients were enrolled randomly by 1961 general practitioners centers**

- **Missing data were completed based on personal interviews**

  → which then facilitated a high response rate

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Conclusions

- **Certain diagnosis e.g. diabetes are highly accurate**
  → self-reported diagnosis are reliable

- **Other diagnosis e.g. cardiac arrhythmia or heart failure have low agreement**
  → self-reported diagnosis are unreliable

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Conclusions

- **Potential limitations of self-report**
  - especially for diseases who require less monitoring and or medication
  - additional data sources such as medical records are required

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Conclusions

- **However, a number of patient characteristics are associated with over-/underreporting such as:**
  - male gender
  - age
  - choice of individual general practitioner

- **Considering patient characteristics for more specific and diagnostically complex conditions**

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