Cardiology Practice in Europe.

How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

Frank Sonntag, Henstedt Ulzburg, Germany
Thank you for the kind invitation to TROMSØ!
Cardiology Practice in Europe. How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

It has been a great pleasure and honour for me.
„Midsummernight“ in Tromso- A very recent article in our „yellow press“!
Cardiology Practice in Europe. How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

Frank Sonntag, Henstedt Ulzburg, Germany
Cardiology Practice in Europe
How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

INTRODUCTION
Stable angina
Coronary Artery Disease
Our daily bred….but:

„Do not fear to repeat what already has been said. People need repetition.“

Laennec 1781-1826
Stable angina
Coronary Artery Disease
Our daily bred…...but:

I think everything has been said
concerning this topic-
but not by everybody“

F. Sonntag, 2009
How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?
Coronary heart disease (CHD) is the leading cause of death worldwide: 3.8 million men and 3.4 million women died from CHD in 2002.

2. Heart Disease and Stroke Statistics – 2008 Update AHA
3. World Health Organization. WHO Statistics, Mortality Database

1,413,000 US hospital-discharged cases of acute coronary syndromes in 2005.

449,879 deaths due to acute myocardial infarction and other ischemic heart diseases in 5 European countries* in 2000:

*European countries included: United Kingdom, France, Germany, Italy, Spain

Highest ranked countries based on CHD mortality in 2002:

- Russian Federation: 674,881
- India: 1,531,534
- China: 702,925

Frank Sonntag, Henstedt Ulzburg, Germany
Despite all modern therapies, the burden of CV disease in Europe, is still unbearable. CVD causes about 450 thousand deaths annually in Europe. CVD causes nearly half of all deaths in Europe (49%) and in the EU (42%). Overall CVD is estimated to cost the EU economy €169 billion a year.

Therefore, a tremendous need exists to save more lives, to help patients to maintain a good quality of life, and to find ways to do so without exhausting the financial HC sources.

- **One way** must be an early diagnosis!
- **The best way** –of course- would be Primary Prevention.
People who stay healthy tend to have certain characteristics:

0  No tobacco
3  Walk 3 km daily, or 30 mins any moderate activity
5  Portions of fruit and vegetables a day
140 Blood pressure less than 140 mm Hg systolic
5  Total blood cholesterol < 5 mmol/l
3  LDL cholesterol < 3 mmol/l
0  Avoidance of overweight and diabetes
Cardiology Practice in Europe. How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

1. INTRODUCTION

2. How should a patient with chronic stable angina best be investigated outside hospital?

3. Reimbursement

Frank Sonntag, Henstedt Ulzburg, Germany
Mission: Reduce the Burden of Cardiovascular Disease in Europe

New ESC Guidelines
Frank Sonntag, Henstedt Ulzburg, Germany
Guidelines on the management of stable angina pectoris: full text‡

The Task Force on the Management of Stable Angina Pectoris of the European Society of Cardiology

Authors/Task Force Members, Kim Fox, Chairperson, London (UK)*, Maria Angeles Alonso Garcia, Madrid (Spain), Diego Ardissino, Parma (Italy), Pawel Buszman, Katowice (Poland), Paolo G. Camici, London (UK), Filippo Crea, Roma (Italy), Caroline Daly, London (UK), Guy De Backer, Ghent (Belgium), Paul Hjemdahl, Stockholm (Sweden), José Lopez-Sendon, Madrid (Spain), Jean Marco, Toulouse (France), João Morais, Leiria (Portugal), John Pepper, London (UK), Udo Sechtem, Stuttgart (Germany), Maarten Simoons, Rotterdam (The Netherlands), Kristian Thygesen, Aarhus (Denmark)
Definition, diagnosis and assessment

- Stable angina: clinical syndrome characterized by discomfort in the chest, jaw, shoulder, back or arms
  - Elicited by exertion or emotional stress
  - Relieved by rest or nitroglycerin
- Term is usually confined to cases in which the syndrome can be attributed to myocardial ischaemia
- Purpose of diagnosis and assessment:
  - Confirmation of the presence of ischaemia in patients with suspected stable angina
  - Identification or exclusion of associated conditions or precipitating factors
  - Risk stratification
  - To plan treatment options
  - Evaluation of the efficacy of treatment

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  - Evaluation of the efficacy of treatment

The leading symptom!
CAD with regard to time and development of stenosis compared to relevance of testing procedures

Stress-EGG
Stress-Echo
Szintigraphy
PET

non invasive
EBT
IVUS

invasive

Angiography

Plaque-size: 20% 45% 70% 90%

Normal Stary II-III IV Va-c VI a-c

Quelle: Erbel, Dtsch Ärzteblatt 1998; 95: 1092-1098

Frank Sonntag, Henstedt Ulzburg, Germany
Development of ischemic events with regard increasing exercise

- Angina pectoris
- ECG-disorders
- Wall motion disorders
- Diastolic Dysfunction
- Metabolic disorders
- Disorders of perfusion

Ross et al., Circ 1991; 83: 1076-1083

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Definition
of the clinical differential diagnosis
of chronic stable chest pain
in accordance with the guidelines of the ESC

Typical angina (definite): Meets three of the following characteristics

- Substernal chest discomfort of characteristic quality and duration
- Provoked by exertion or emotional stress
- Relieved by rest and / or GTN

Atypical angina (probable): Meets two of these characteristics

Non cardiac chest pain: Meets one or none of the characteristics
### Canadian Cardiovascular Society classification of angina severity

<table>
<thead>
<tr>
<th>Class</th>
<th>Level of symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I</td>
<td>&quot;Ordinary activity does not cause angina&quot;</td>
</tr>
<tr>
<td></td>
<td>Angina with strenuous or rapid or prolonged exertion only</td>
</tr>
<tr>
<td>Class II</td>
<td>&quot;Slight limitation of ordinary activity&quot;</td>
</tr>
<tr>
<td></td>
<td>Angina on walking or climbing stairs rapidly, walking uphill or exertion after meals, in cold weather, when under emotional stress, or only during the first few hours after awakening</td>
</tr>
<tr>
<td>Class III</td>
<td>&quot;Marked limitation of ordinary physical activity&quot;</td>
</tr>
<tr>
<td></td>
<td>Angina on walking one or two blocks* on the level or one flight of stairs at a normal pace under normal conditions</td>
</tr>
<tr>
<td>Class IV</td>
<td>&quot;Inability to carry out any physical activity without discomfort&quot; or &quot;angina at rest&quot;</td>
</tr>
</tbody>
</table>

* Equivalent to 100–200 m.
### Levels of evidence

<table>
<thead>
<tr>
<th>Level of evidence</th>
<th>Available evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Multiple randomized clinical trials or meta-analyses</td>
</tr>
<tr>
<td>B</td>
<td>Single randomized clinical trial or large non-randomized studies</td>
</tr>
<tr>
<td>C</td>
<td>Consensus opinion of experts and/or small studies, retrospective studies, registries</td>
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### Levels of recommendation

<table>
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<th>Strength of recommendation</th>
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<tr>
<td>Class I</td>
<td>Evidence and/or general agreement that a given diagnostic procedure/treatment is beneficial, useful and effective</td>
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<td>Conflicting evidence and/or divergence of opinions about the usefulness/efficacy of a treatment or procedure</td>
</tr>
<tr>
<td>IIa</td>
<td>Weight of evidence/opinion is in favour of usefulness/efficacy</td>
</tr>
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<td>Usefulness/efficacy is less well established by evidence/opinion</td>
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Frank Sonntag, Henstedt Ulzburg, Germany
### Recommendations for routine non-invasive investigations for stable angina (1)

<table>
<thead>
<tr>
<th>Test</th>
<th>For Diagnosis</th>
<th>For Prognosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory tests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full blood count, creatinine</td>
<td>I C</td>
<td>I B</td>
</tr>
<tr>
<td>Fasting glucose</td>
<td>I B</td>
<td>I B</td>
</tr>
<tr>
<td>Fasting lipid profile</td>
<td>I B</td>
<td>I B</td>
</tr>
<tr>
<td>hs CRP, homocysteine, lp(a), apoA, apoB</td>
<td>I Ib B</td>
<td>I Ib B</td>
</tr>
<tr>
<td>ECG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial evaluation</td>
<td>I C</td>
<td>I B</td>
</tr>
<tr>
<td>During episode of angina</td>
<td>I B</td>
<td></td>
</tr>
<tr>
<td>Routine periodic ECG on successive visits</td>
<td>I Ib C</td>
<td>I Ib C</td>
</tr>
<tr>
<td>Ambulatory ECG monitoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suspected arrhythmia</td>
<td>I B</td>
<td></td>
</tr>
<tr>
<td>Suspected vasospastic angina</td>
<td>I Ib C</td>
<td></td>
</tr>
<tr>
<td>Suspected angina with normal exercise test</td>
<td>I Ib C</td>
<td></td>
</tr>
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Frank Sonntag, Henstedt Ulzburg, Germany

**Recommendations for routine non-invasive investigations for stable angina (2)**

<table>
<thead>
<tr>
<th>Test</th>
<th>For Diagnosis</th>
<th>For Prognosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest X-ray</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suspected heart failure, or abnormal cardiac auscultation</td>
<td>I B</td>
<td>I B</td>
</tr>
<tr>
<td>Suspected significant pulmonary disease</td>
<td>I B</td>
<td></td>
</tr>
<tr>
<td>Echocardiogram</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suspected heart failure, abnormal auscultation, abnormal</td>
<td>I B</td>
<td>I B</td>
</tr>
<tr>
<td>ECG, Q waves, BBB, marked ST changes</td>
<td>I B</td>
<td></td>
</tr>
<tr>
<td>Previous myocardial infarction</td>
<td>I B</td>
<td></td>
</tr>
<tr>
<td>Hypertension or diabetes mellitus</td>
<td>I C</td>
<td>I B/C</td>
</tr>
<tr>
<td>Intermediate or low risk patient not due to have alternative assessment of LV function</td>
<td>Ila C</td>
<td></td>
</tr>
<tr>
<td><strong>Exercise ECG</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First line for initial evaluation, unless unable to exercise/ECG not evaluable</td>
<td>I B</td>
<td>I B</td>
</tr>
<tr>
<td>Patients with known CAD and significant deterioration in symptoms</td>
<td>I B</td>
<td></td>
</tr>
<tr>
<td>Routine periodic testing once angina controlled</td>
<td>I Ib C</td>
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</tr>
</tbody>
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How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

Frank Sonntag, Henstedt Ulzburg, Germany

### Recommendations for routine non-invasive investigations for stable angina (3)

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<tr>
<th>Test</th>
<th>For Diagnosis</th>
<th>For Prognosis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exercise imaging technique (echo or radionuclide)</strong></td>
<td>IB</td>
<td>IB</td>
</tr>
<tr>
<td>Initial evaluation in patients with uninterpretable ECG</td>
<td>IB</td>
<td>IB</td>
</tr>
<tr>
<td>Patients with non-conclusive exercise test (but adequate exercise tolerance)</td>
<td>IB</td>
<td>IB</td>
</tr>
<tr>
<td>For angina post-revascularization</td>
<td>IIa B</td>
<td>IIa B</td>
</tr>
<tr>
<td>To identify location of ischaemia in planning revascularization</td>
<td>IIa B</td>
<td>IIa B</td>
</tr>
<tr>
<td>Assessment of functional severity of intermediate lesions on arteriography</td>
<td>IIa C</td>
<td></td>
</tr>
<tr>
<td><strong>Pharmacological stress imaging technique</strong></td>
<td>IB</td>
<td>IB</td>
</tr>
<tr>
<td>Patients unable to exercise</td>
<td>IB</td>
<td>IB</td>
</tr>
<tr>
<td>Patients with non-conclusive exercise test due to poor exercise tolerance</td>
<td>IB</td>
<td>IB</td>
</tr>
<tr>
<td>To evaluate myocardial viability</td>
<td>IIa B</td>
<td></td>
</tr>
<tr>
<td>Other indications as for exercise imaging where local facilities favour pharmacological rather than exercise stress</td>
<td>IIa B</td>
<td>IIa B</td>
</tr>
<tr>
<td><strong>Non-invasive CT arteriography</strong></td>
<td>IIb C</td>
<td></td>
</tr>
<tr>
<td>Patients with low probability of disease and non-conclusive or positive stress test</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Reasons to terminate exercise stress test

- Symptom limitation, e.g., pain, fatigue, dyspnoea, and claudication
- Combination of symptoms such as pain with significant ST changes
- Safety reasons:
  - Marked ST-depression
  - ST-elevation ≥ 1 mm
  - Significant arrhythmia
  - Sustained fall in systolic blood pressure > 10 mmHg
  - Marked hypertension (>250 mmHg systolic or > 115 mmHg diastolic)
- Achievement of maximum predicted heart rate in patients with excellent exercise tolerance who are not tired and at the discretion of the supervising physician
## Test characteristics for investigations used in the diagnosis of stable angina

<table>
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<tr>
<th>Investigation</th>
<th>Sensitivity (%)</th>
<th>Specificity (%)</th>
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<tr>
<td>Exercise ECG</td>
<td>68</td>
<td>77</td>
</tr>
<tr>
<td>Exercise echo</td>
<td>80–85</td>
<td>84–86</td>
</tr>
<tr>
<td>Exercise myocardial perfusion</td>
<td>85–90</td>
<td>70–75</td>
</tr>
<tr>
<td>Dobutamine stress echo</td>
<td>40–100</td>
<td>62–100</td>
</tr>
<tr>
<td>Vasodilator stress echo</td>
<td>56–92</td>
<td>87–100</td>
</tr>
<tr>
<td>Vasodilator stress myocardial perfusion</td>
<td>83–94</td>
<td>64–90</td>
</tr>
</tbody>
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</table>

*Not available in many private practices in several European countries*
<table>
<thead>
<tr>
<th>Diagnostic Procedure</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical evaluation/History</td>
<td>100 %</td>
</tr>
<tr>
<td>Exercise stress test</td>
<td>nearly 100 %</td>
</tr>
<tr>
<td>Echocardiographie</td>
<td>50 – 100 %</td>
</tr>
<tr>
<td>Stress Echocardiography</td>
<td>0 – 70 %</td>
</tr>
<tr>
<td>- Physical stress</td>
<td></td>
</tr>
<tr>
<td>- Pharmacological stress</td>
<td></td>
</tr>
<tr>
<td>Calcium Scoring</td>
<td>Usually in cooperation with radiologist</td>
</tr>
<tr>
<td>Coronarangiography by Non invasive MSCT</td>
<td>dito</td>
</tr>
</tbody>
</table>
How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

Frank Sonntag, Henstedt Ulzburg, Germany
Algorithm for initial evaluation of patients with clinical symptoms of angina (2)

Low risk
Annual CV mortality <1% per year

- Medical therapy

Intermediate risk
Annual CV mortality 1-2% per year

- Medical therapy ± Coronary arteriography
  Depending on level of symptoms and clinical judgement

- Coronary arteriography if not already performed

High risk
Annual CV mortality >2% per year

- Medical therapy AND Coronary arteriography
  for more complete risk stratification and assessment of need for revascularization

Evaluate response to medical therapy

- NO
  - High risk coronary anatomy known to benefit from revascularization?
    - YES
      - Revascularise
    - NO
- YES

If symptomatic control unsatisfactory, consider suitability for revascularisation (PCI or CABG)

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Patient with chest pain

Clinical evaluation /History

Will exercise stress test be possible?

No

Yes

Echocardiography

Imaging technique
- Stress echo
- Szintigraphy
- Cardio MRT/MSCT

Exercise stress test
Achievement of max. predicted heart rate

No

Yes

Probability of CAD (SCORE)

LOW <10%

High >90%

Intermediate -90 %

Coronarangiography

PCI / Bypass

konservativelly

Flowchart of Conventional clarification of chest pain


Cardiology Practice in Europe.
How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

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Cardiology Practice in Europe. How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

Flowchart of Modern clarification of chest pain


Frank Sonntag, Henstedt Ulzburg, Germany
Event rate rises with number of risk factors

% Atherothrombotic events per anno

<table>
<thead>
<tr>
<th>Number of Risk Factors</th>
<th>Annual Event Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–1</td>
<td>21.8%</td>
</tr>
<tr>
<td>2–3</td>
<td>5.5%</td>
</tr>
<tr>
<td>4–5</td>
<td>2.5%</td>
</tr>
<tr>
<td>6–7</td>
<td>1.5%</td>
</tr>
<tr>
<td>8 or more</td>
<td>1.0%</td>
</tr>
</tbody>
</table>

Caro J. *Eur Heart J* 2001; **22**(abstr suppl):522

Frank Sonntag, Henstedt Ulzburg, Germany
How do I assess CVD risk quickly and easily?

- Those with-
  ~known CVD
  ~type 2 diabetes or type 1 diabetes with microalbuminuria,
  ~very high levels of individual risk factors

are already at INCREASED CVD RISK and need management of all risk factors

For all other people, the SCORE risk charts can be used to estimate total risk—this is critically important because many people have mildly raised levels of several risk factors that, in combination, can result in unexpectedly high levels of total CVD risk
10 year risk of fatal CVD in high risk regions

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10 year risk of fatal CVD in low risk regions

Women

Men

SCORE

15% and over
10% - 14%
5% - 9%
3% - 4%
2%
1%
< 1%

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How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

Patient with chest pain

Clinical evaluation /History

Echocardiography

Will exercise stress test be possible?

Yes

Imaging technique
- Stress echo
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- Cardio MRT/MSCT

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Achievement of max. predicted heart rate

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LOW <10%

High >90%

Intermediate -90%

No

konservatively Coronarangiography PCI / Bypass

Flowchart of Conventional clarification of chest pain

Cardiology Practice in Europe.
How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

1. INTRODUCTION

2. How should a patient with chronic stable angina best be investigated outside hospital?

3. Reimbursement
**REIMBURSEMENT IN PRIVATE PRACTICE I**

(Belgium, France, Germany, Italy, Norway, Portugal, Spain, Switzerland, Czech Republic)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Cost Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical evaluation/History</td>
<td>From 12 – 80 Euro</td>
</tr>
<tr>
<td>Exercise stress test</td>
<td>From 27 – 100 Euro</td>
</tr>
<tr>
<td>Echocardiography</td>
<td>&lt; 50 – 150 Euro</td>
</tr>
<tr>
<td>Stress Echocardiography - Physical stress</td>
<td>235 Euro</td>
</tr>
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<tr>
<td>Coronary angiography by</td>
<td>about 400 Euro</td>
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<tr>
<td>- Non invasive MSCT</td>
<td></td>
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## Special forms

### France:
- Consultation: 42 – 58 Euro
- Stresstest: 77 Euro
- Echo: 96 Euro
- Stressecho: 150 Euro

### Germany
- Consultation + Examination + ECG + Stresstest + Echo: 45 - 75 Euro
  - Privat: 6 - 10 fold higher

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*Frank Sonntag, Henstedt Ulzburg, Germany*
How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

### NORWAY

- **Special forms**
  - No Reimbursement

- **Consultation**
  - pyhs.exam + ECG + Exercise ECG: 110€

- **Spirometrie + Echo + ultrasound of the aorta/carotides:** 138€

### Stressedecho (N)
- **Szintigraphy (N)**
- **Troponin Test (N)**

### Difference NHS - Private:

400 – 5000 €

**full examination „All inclusive“** (private negotiation)
How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

Special forms Czech Republic

No Reimbursement/Only in hospitals available

Consultation+phys.exam : 24 €
ECG : 5 €
Exercise ECG : 21 €
Spirometrie+Echo+ultrasound of the aorta/carotides: 138 €

Stressecho
Szintigraphy
MSCT

„It is not clear!“

Difference NHS - Private:
**Special forms Switzerland**

<table>
<thead>
<tr>
<th>Test</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultation + physical exam</td>
<td>€60.25</td>
</tr>
<tr>
<td>ECG</td>
<td>€21</td>
</tr>
<tr>
<td>Exercise ECG</td>
<td>€83.4</td>
</tr>
<tr>
<td>Stress Echo</td>
<td>€255.15</td>
</tr>
<tr>
<td>Szintigraphy</td>
<td>€977.50</td>
</tr>
<tr>
<td>Troponin Test</td>
<td>€33</td>
</tr>
</tbody>
</table>

**No difference**

90% of the amount are paid
SUMMARY I

• Coronary artery disease is widespread in European countries

• Cardiologists in private practice should investigate patients with chronic stable angina early and outside hospital. Many „modern“ examination are not available in many practices.

• There are great differences in European countries concerning the equipment of private practices.
SUMMARY II

• Reimbursement of often done procedures differs to a high extent in European countries.

• These differences cannot be explained through medical reasons but most likely through political and socioeconomic ones.

• Harmonization of these differences are not likely to occur within the next 5 to 10 years (if at all!!)
And yet:

Quality of medical care must be promoted with „full speed“ in all European countries.

Hopefully reimbursement will follow!

Thank you for your attention

Frank Sonntag, Henstedt Ulzburg, Germany
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Cardiology Practice in Europe. How should a patient with chronic stable angina be investigated outside hospital and what is the reimbursement in various European countries?
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Frank Sonntag, Henstedt Ulzburg, Germany
Die Entwicklung eines atherosklerotischen Plaques

Adapted from Libby P. Circulation 2001;104:365-372

Entwicklung und Rupture einer atherosklerotischen Läsion

Zeit

Infarkt

Plötzlicher Herztod

Angina pectoris

Rupture and thrombus formation

Normal

Fatty Streak

Occlusive Plaque

Plaque Rupture

Plättchen Aktivierung und Aggregation, thrombusformation

Frank Sonntag, Henstedt Ulzburg, Germany
Abstract
Coronary artery disease remains the most common cause of mortality in the developed world. It surpasses all malignancy related deaths with large varying mortality rates across Europe and worldwide. The resulting need for reduction of CAD morbidity can only be achieved by early detection of patients at high coronary risk before occurrence of a coronary event. Family doctors and Cardiologists in private practice should identify these people early. Guidelines for prevention of CVD, for detection and management of chronic CAD, ACS and secondary prevention are available in most European countries. Many of them are adopted to the guidelines of the ESC.

There are great differences in European countries as well in the variety of mortality and morbidity rates with France having the lowest and Ukraine and other eastern countries having the highest rates as in the possibility of early diagnosis in private practices.
Stable angina is a clinical syndrome characterized by discomfort in the chest, jaw, shoulder, back or arms, elicited by exertion or emotional stress, relieved by rest or nitroglycerin. Typical angina (definite): Meets three of the following characteristics
Substernal chest discomfort of characteristic quality and duration
Provoked by exertion or emotional stress
Relieved by rest and / or GTN
Atypical angina (probable) : Meets two of these characteristics
Non cardiac chest pain: Meets one or none of the characteristics
Cardiologists in private practice are able to investigate patients by exercise stress testing in nearly 100%. The value of this test for diagnosis is affected greatly by the pre-test likelihood of coronary artery disease. Different scores have been evaluated to identify patients at high, intermediate or low risk. (FRAMINHAM, PROCAM, EUROSCORE)

Modern imaging ischemia diagnosis techniques like stress echocardiography, myocardial scintigraphy multislice CT and cardiac MRT are not available in most of private practices – again with great differences between European countries. These techniques are able to rise the sensitivity of the first diagnostic steps. They may reduce cardiac catheterization and unnecessary therapies f.e. with statins or ASS. Networks with radiologists and departments of hospitals have been established in order to complete the diagnostic possibilities outside hospitals.
Reimbursement
Reimbursement of often done procedures differs to a high extent in European countries. Some examples:

- Clinical evaluation / History: 12 – 80 €
- Exercise stress test: 27 – 100 €
- Echocardiography: < 50 – 150 €
- Stress echocardiography: 235 €
- MSCT: up to 500 €

Difference NHs - Private payment: Some countries no difference
- Some up to 10 fold “ALL INCLUSIVE” (5000-8000 €)

These differences cannot be explained through medical reasons but most likely through political and socioeconomic ones.

Harmonization of these differences are not likely to occur within the next 5 to 10 years (if at all!!)

And yet:
Quality of medical care must be promoted with „full speed“ in all European countries. Hopefully reimbursement will follow!
Despite all modern therapies, the burden of CV disease in Europe, is still unbearable.

CVD causes about 450 thousand deaths annually in Europe

CVD causes nearly half of all deaths in Europe (49%) and in the EU (42%)

Overall CVD is estimated to cost the EU economy €169 billion a year
Therefore, a tremendous need exists to save more lives, to help patients to maintain a good quality of life, and to find ways to do so without exhausting the financial HC sources.
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