The IFCC Global Campaign of Diabetes Mellitus

IFCC General Conference, Antalya, April 13-15th 2008
Sverre Sandberg, Howard Morris, Matthew McQueen
Content

- to give an overview of what has been done last 5 years
- to discuss future tasks
- to discuss limitations of the present work
WHY IFCC Global Campaign of Diabetes Mellitus?

- prevalence is increasing
- major health care problem
- generates enormous economical problems
  
  15% of health care budget will be spent on Diabetes Mellitus related diseases!!

- disease where laboratory medicine is very important.
But also because it is a opportunity to show that laboratory medicine is active from standardization and reference materials to interaction with physicians and patients
IFCC Task Force
Global Campaign of Diabetes Mellitus.

Members
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26 country representatives
(a) Examine the best diagnostic strategy for diagnosing diabetes mellitus.

(b) Review and study the current use of laboratory test, and educate doctors and patients in interpretation of laboratory tests used in diagnosing and monitoring of diabetes mellitus.

(c) Provide quality specifications for analytes used to diagnose and monitor diabetes mellitus.

(d) Give recommendations on self-monitoring of blood glucose

(e) Try to associate with other groups or persons (including manufacturers) who will co-operate on the work to be done.
Global Campaign, Terms of references

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• Questionnaire to national societies of IFCC
• International external quality assessment of use and interpretation of Glucose, HbA1c and Urine - albumin
• Evaluation of guidelines for DM
Global Campaign of Diabetes Mellitus

Questionnaire circulated to all member societies
Questions dealing with

- Units for HbA1c
- How to diagnose DM
- How to monitor DM
- Quality spec. for analytes used in DM
- Use of SMBG
Conclusions

- Most countries use “DCCT” numbers for HbA1c
- Diagnosis: WHO or ADA; 6 countries used HbA1c
- Monitoring: HbA1c 4 times a year type I / variable for type II
- SMBG for type 1 > 90% in 50% of the countries, for type 2 less than 15% in 50% of the countries
- No specific analytical quality specifications

Global Campaign of Diabetes Mellitus
Post - analytical external quality assurance of interpretation of glucose and HbA1c results

Case histories distributed in

- Argentina
- Australia*
- Norway*
- Netherlands*
- Hungary*
- Spain*
- South-Africa
- Sweden*

Circulated to about 6000 GPs
Physicians: HbA1c

A 45 year-old, considerably overweight woman with 5 children. She was diagnosed with type II diabetes 4 years ago and you are her physician. Her diabetes treatment was a total daily dose of 7 mg glibenclamide and 500 mg metformine. She has a tight everyday schedule paying little attention to her diet and without time for exercise.
By consultation now the HbA1c is 9.1 %
You do what you find appropriate.

What do you mean the HbA1c test result should be at the next consultation for the value to indicate:

A. *Better diabetes control*:
HbA1c value must have decreased to at least ......%

B. *Poorer diabetes control*:
HbA1c value must have increased to at least ......%
Feedback report to the participants

• Information on
  – Own results compared to others
  – Corresponding analytical quality
  – Information on analytical and biological variation
  – Guidelines for use of glucose and HbA1c

Clin Chem, 2005; 51:1143-51
Microalbuminuria – Standardization Working Group and Clinical Assessment
Assessment of interpretation by reviewing a case history

Sent to about 10 000 GPs
Questions in the case history

- how important the physician think it is to analyse u-albumin in this patient
- analytical methods used
- what samples are used
- critical differences
- how the finding of microalbuminuria influences treatment of the patient
Letter to organizers

Dear Colleagues,

The Norwegian Quality Improvement of Laboratory Services in Primary Care (NOKLUS) and the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) are pleased to invite you to participate in the survey "Microalbuminuria and Diabetes in Primary Health Care Service: International Case History Investigation".

Our objective is to determine the treatment and patient behavior of microalbuminuria (MA) in patients with diabetes and to compare the results obtained in different countries. A case history and questionnaire will be included in order to test guidelines concerning use of MA testing in diabetic patients. The questionnaire will be sent to different nations and regions, and the results will be evaluated using statistical methods. The results from the survey will be used to develop guidelines and treatment strategies for the management of diabetes-related chronic disease and other comorbidities.

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NOKLUS Three International Surveys on Diabetes and related comorbidities have been conducted in different countries. The questionnaire will be sent to all participating GPs. The results will be presented in a scientific publication. The case history and questionnaire will be sent to the participants. The results will be evaluated using statistical methods. The results from the survey will be used to develop guidelines and treatment strategies for the management of diabetes-related chronic disease and other comorbidities.

NOKLUS and the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) gratefully acknowledge the efforts of all participating GPs. We thank you for your cooperation and support.

Letter to participants

Receive - translate - distribute - register - translate feedback report - distribute
Registration of questionnaires

Welcome

Microalbuminuria and Diabetes in Primary Health Care
International Case History Investigation

This website is for participants in the investigation.
Please login above to continue.
Feedback

Clinical Update

Translate - adjust - return - distribute (from Web)
Examples of results from country specific feed-back reports (each participant is compared with others in the country)
A. How important is it to test if this patient has MA now? - please specify importance on a scale of 1 (totally unnecessary) to 10 (very important): 8

B. If he does not have MA now, when should his urine be retested?
Feedback report to each individual clinician

- All own responses compared to others
- FROM GUIDELINES
- Who should have a u-albumin test
- How to diagnose Microalbuminuria
- How to interpret differences between consecutive u-albumin results
- How to treat Microalbuminuria
Summary U-albumin

1. There is confusion about the type of sample and type of units that should be used.
2. There is not adherence to guidelines when it comes to diagnosis of MA.
3. Can the diagnosis be made in PHC?
4. Impact of biological variation is not known.
5. Diagnosing MA has a varying impact on how to deal with the patients (i.e. drug treatment).
Recommendations

1. Methods for sample collection and results reporting for UA analysis should be as simple as possible to promote uniform practice among GPs.

2. The need for repeat analyses to diagnose MA may be difficult to incorporate into everyday practice, and the evidence for this recommendation should be weighed against the practicability.
3. The more UA analysis is emphasized in clinical care, the more guidelines should be concerned with recommendations on laboratory aspects of UA measurement.

4. IFCC should be encouraged to develop concerted actions with clinical societies, where IFCC could have the responsibility for the detailed laboratory part, in order to establish common recommendations for diagnosing MA.
Evaluation of 26 guidelines for DM - with C-EBLM

Horvath, A.R.¹; Nagy, E.¹; Watine, J.²; Bunting, P.³; Onody, R.¹; Oosterhuis, W.⁴; Rogic, D.⁵; Sandberg, S.⁶; Boda, K.

**Conclusions:** The poor quality of GLs on the diagnosis and monitoring of DM question the internal and external validity of recommendations which may affect their implementation in practice. Our results call for systematically developed, explicit recommendations, based on evidence-based guideline development and reporting standards in laboratory medicine.

(Submitted Clin Chem)
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(e) Try to associate with other groups or persons (including manufacturers) who will co-operate on the work to be done.
By giving the critical differences needed physicians indirectly suggest QS for HbA1c, glucose and U-Alb
And by questioning the patients they indirectly set QS for glucose in SMBG and HbA1c
QS has still to be set for u-albumin

3 publ Clin Chem
Global Campaign, Terms of references

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Standardized evaluation of SMBG instruments / EQAS for SMBG / Control at GPs office

• Developing a model for how these instruments should be evaluated in a standardized way.
• Establish principles for EQAS for patients
• Establish principles for how instruments and patients can control their practice at GPs offices or at pharmacies

4. Point of Care 2006;5:100-4.
6. Submitted 2008;
CHAPTER 6:
DIAGNOSIS AND MANAGEMENT OF DIABETES MELLITUS

SMBG chapter and glucose chapter written together with IFCC representatives

Also as sep. paper i
Point of Care 2007
Developing practice guidelines for the use of SMBG

Possible joint project with IDF and IFCC
Global Campaign, Terms of references

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U-albumin
Standardization, measurement and reporting
- meeting in Washington 2007 -

Panteghini, McQueen and Sandberg
Agenda

- Review of current status of measurement and reporting (clinical reporting and EQAS)
- Measurement issues for albumin in urine
- Quality specifications
- Sample collection and pre-analytical considerations,
- Urine albumin measurement procedures,
- IDMS candidate reference measurement procedure,
- Urine albumin as a measurand,
- Impact of change in calibration of urine creatinine on the albumin/creatinine ratio
Current Issues in Measurement and Reporting of Urinary Albumin Excretion - a review article -

W. Greg Miller, Andrew Narva, David E Bruns, Glen L Hortin, Sverre Sandberg, Kristin M Aakre, Graham Jones, Matthew McQueen David Seccombe Yoshihisu Itoh, David Bunk, John C. Lieske, Gary C. Curhan
Symposiae / courses

On every major conference and a lot of national and regional Conferences since 2003.

Visiting lecturer:
Mexico
Russia
Clinical aspects of kidney disease
The role of laboratory medicine in the evaluation of kidney function
Kidney and non-renal diseases
Cooperation

NACB
NKDEP
IDF

Within IFCC
C - POCT
C - EBLM
C - NPU
WG HbA1c
C - AQ
(own) Evaluation

Some work has been done

HOWEVER - more is to be done:

Especially:

IFCC should be more active in the clinical “diabetes world”.

All work in IFCC has not been integrated, e.g. Standardization / nomenclature HbA1c
Thank you