The Great Debate – How often is enough?

BARS Annual Conference, 23 September 2010

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This house believes that patients should be screened annually for diabetic retinopathy

Format

- Straw poll
- Present the pros and cons
- Expert panel discussion
- Open debate
- Repeat poll

Straw poll

- Annually
- 2 yearly for R0
- Individualised
- Undecided

Recommended screen intervals

- The ENSPDR current recommendation is annual screening for all PWD aged ≥12 years*

- Recommendations for alternative screening intervals have been made by national & international groups based on expert opinion / consensus rather than direct evidence.

* *Workbook version 4.3 www.retinalscreening.org.uk*

- European Retinopathy Working Party recommends screening at least 2 yearly after diagnosis and at least yearly or more frequently if retinopathy develops [1]

- ADA recommends yearly or more frequently for type 2 DM [2]

- AAO recommends yearly screening for no DR / BDR and 6-12 monthly screening for mild PPF without maculopathy [3]

1. Diabet Med 1991;8:263–67

2. Diabetes Care 1998;21:157–59. 3

3. http://www.aao.org/ppp

Evidence for longer intervals…

- Incidence data
- Cost-effectiveness
- Patient “costs”

Cumulative incidence of STDR in Type 2 diabetes

7615 patients underwent 20,570 screen events

- Progression to STDR in year 1
  - BDR 5%
  - Mild PPF 15%

- 95% likelihood of remaining free of STDR:
  - No DR 5.4 years
  - BDR 1.0 years
  - Mild PPF 0.3 years

Lancet 2003;361:195-200

Cumulative incidence (CI) of STDR in Type 1 diabetes

501 patients underwent 2742 screen events

- CI of STDR in patients without baseline DR:
  - 0.3% at 1 year
  - 3.9% at 5 years

- 95% likelihood of remaining free of STDR:
  - No DR 5.7 years
  - BDR 1.3 years
  - Mild PPF 0.4 years

Diabetes Medicine 2003;20:758-765

Conclusions

- Patients with both type I and type 2 diabetes and no DR at baseline could safely be screened at longer intervals (up to 3 years) unless:
    - duration > 20 years
    - insulin use in patients with type 2 diabetes
- Patients with BDR or the above risk factors need to be screened annually
- Patients with mild PPR need to be screened 4-6 monthly

Norfolk Data

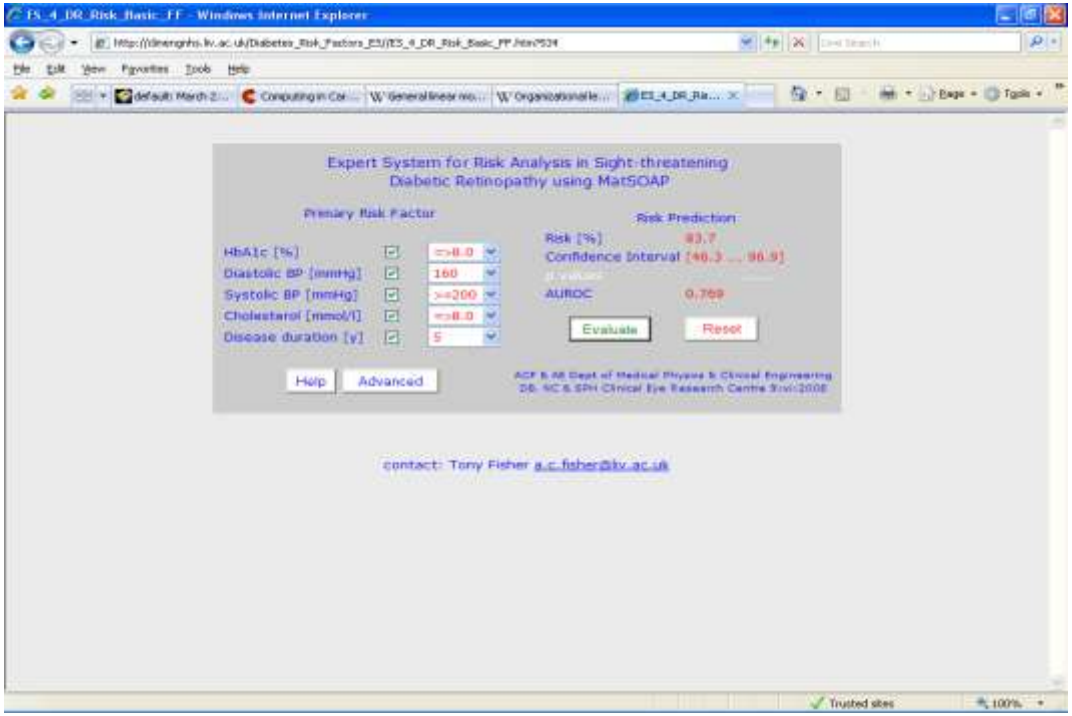
- Patients managed solely in general practice
- 1990-2006
- 20,788 people screened at least once - 63,622 screen episodes

- Screen intervals of 18-24 months cf 12-18 months were not associated with a higher risk of STDR
- For a screen interval of >2 years there was a 60% increase in likelihood of STDR being detected

- Complements data from Liverpool

Diab Med 2009;26:1040-47

Individualised screen intervals



Example of ***v poor control*** at 5 years

Risk = 83.7%

www.liverpooleye.org

Wilson and Jungner screening principles

- The cost of the case-finding programme (including early diagnosis and treatment of patients diagnosed) should be economically balanced in relation to possible expenditure on medical care as a whole

WHO 1968

Cost-effectiveness

Liverpool incidence data suggested that 70% patients with no DR and no high risk criteria could be screened less frequently than annually, resulting in sizeable cost savings*

*this data is based on imaging using 35mm transparencies and it may be that digital imaging is more sensitive at detection of BDR

Cost per QALY

- Cost utility analysis allows cost comparisons across different diseases
- Quality adjusted life years (QALYs) are used as a measure of the utility value for a health condition multiplied by the remaining years of life expectancy
- Interventions for diseases with onset at earlier ages show greater impact on QALYs – longer expected period of benefit (e.g. type I diabetes)
- Procedures with a cost per QALY between $20,000 and $50,000 considered beneficial

Vijan et al

- Modelling – evaluation of progression of DR and cost
- High risk type 2 patients (younger and HbA1C >11) would have a cost of $40,530 per QALY
- Low risk patients (older patients with HbA1C <7) cost an additional $211,570 per QALY
- Screening every 2 years would reduce cost to $107,510 per QALY. Screening every 3rd year would reduce to $49,760 per QALY
- Did not take into account cost of effects of blindness

JAMA 2000:283:889-96

Patient "costs"

- Reduced screening intervals would be more convenient for patients in terms of:
  - Fewer appointments
  - Inconvenience of dilatation
  - Time off work
  - Travelling costs
  - Time

Evidence for annual screening…

- Change in risk factors
- Non-attendance
- Feasibility
- Acceptability
  - to patient
  - to health professionals
- Cost

Changing Risk factors

- Worsening control
  - Adolescence
  - Stress / depression – family/ personal illness, bereavement, change in circumstances

- Tightening control
  - Nb. Insulin pumps (pregnancy)
  - Retinal worsening
  - Reduce HbA1C by ≥ 3% in 1 year

Non-attendance

- Chronic disease: multiple appointments
- Failure to attend may relate to lack of appreciation by people with diabetes of the risk of visual impairment
- Increased risk of progression of disease
- Failure of programmes to meet the ENSPDR key performance indicator on compliance with screening

Feasibility

- Are the software programmes able to manage screen intervals greater than / less than 12 months?

- Are admin teams able to manage screen intervals greater than / less than 12 months?

Acceptability

- To patients
  - I am reassured by annual screening
  - What happens if something does develop?

- To health professionals
  - Patient safety

- Research data is not available on relationship between patient / health professional perceptions and screen interval.

  Qualitative research is required

Cost of missed disease

- Litigation costs are significant
- Cost of supporting a visually impaired patient
- Cost on secondary health effects of blindness is scant
- Blindness has also been associated with increased length of hospital stay, nursing home placement, and hip fracture

Expert panel and open discussion

Straw poll

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- Individualised
- Still undecided

Thank you for taking part in the great debate!