AUSDRISK

Application in general practice

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Background

The Australian Type 2 Diabetes Risk Assessment Tool (AUSDRISK) has been promoted since July 2008. We studied its application rate and the profile of a sample of general practice patients within Central West New South Wales from June to December 2010.

Method

Stage one assessed the awareness and application of AUSDRISK among general practitioners and general practice registrars. In stage two, the doctors used AUSDRISK and appropriate blood tests to screen patients aged 25–74 years who had not been previously diagnosed with diabetes.

Results

Seventy-eight doctors (response rate 45.1%) completed the survey. A total of 68.2% of general practice registrars and 23.2% of GPs were aware of AUSDRISK. Among the respondents 14.1% (95% CI: 6–22%) applied AUSDRISK in their usual practice, and 39.1% (95% CI: 31–47%) of the 151 patients had high AUSDRISK scores ≥15.

Discussion

Two years after the launch of AUSDRISK, the application rate of AUSDRISK is low. In this patient population, many patients had high AUSDRISK scores.

Keywords: risk factors; mass screening; general practice

The Australian Type 2 Diabetes Risk Assessment Tool (AUSDRISK) identifies patients at high risk of developing type 2 diabetes and consists of 10 items which assess risk factors: age, gender, country of birth, family history of diabetes, history of high blood glucose, hypertension, smoking status, fruit and vegetable intake, physical activity levels and waist circumference. Potential scores range from 0–38 and relate to the probability of developing diabetes within the next 5 years.[1,2]

General practitioners have been encouraged to use AUSDRISK[3] and it attracts a Medicare rebate for patients aged 40–49 years who are at high risk of developing type 2 diabetes.[1,2] The application rate of AUSDRISK has yet to be reported. The objectives of this project were to study the knowledge and use of AUSDRISK by GPs and to report the AUSDRISK profile of a sample of patients in general practice.

Method

This two stage study was conducted within the Central West Division of General Practice (CWDGP) in New South Wales, Australia, which covers 21 towns including Orange, Bathurst, Forbes, Lithgow, and Parkes. General practitioners and general practice registrar lists were provided by CWDGP in January 2010.

In the first stage, an initial letter was mailed to the doctors explaining AUSDRISK and the research objectives. A survey form assessed AUSDRISK awareness, whether the doctors were currently applying AUSDRISK, and their interest in using AUSDRISK with a sample of their patients in the second stage.

In the second stage, packages including AUSDRISK copies and a measuring tape were sent to interested doctors who were asked to select 1 day and use the AUSDRISK on every eligible patient they saw on that day. If the patients consented and met the inclusion criteria (aged 25–74 years, not previously diagnosed with diabetes, and not pregnant) they answered nine of the 10 AUSDRISK questions before seeing their doctor. The doctor measured blood pressure, weight, height, and waist circumference (at the umbilicus level when the patient breathed out and held their breath while standing), and calculated the AUSDRISK score. If the AUSDRISK score was low (0–5) no further action was needed. If the score was intermediate (6–14) or high (15–38) the doctor encouraged the patient to have blood tests (fasting blood glucose and oral glucose tolerance test). Anonymous patient data was returned. Results were analysed using SPSS version 18 (SPSS, Inc., Chicago IL) with descriptive statistics and chi square tests.

Ethics approval was granted by The University of Sydney Human Ethics Committee.

Results

A total of 181 initial letters were mailed in June and July 2010. Eight letters were returned undelivered, leaving 173 (130 GPs and 43 general practice registrars). A total of 78 doctors (45% – 56 GPs, 22 general practice registrars) responded to the initial letter. Sixty-eight percent of the registrars were aware of AUSDRISK compared to only 23% of the GPs ($p<0.0001$). Of respondents, 14% (95% CI: 6–22% – three GPs and eight registrars) reported applying AUSDRISK in their practice.

Forty-six (59%) of respondents expressed an interest in receiving the AUSDRISK packages. Of the 46 doctors initially interested in participating, only 18 (39%) returned patient data, with an average of 8.4 patients each (range 3–17). A total of 151 completed patient AUSDRISK forms (109 [72.2%] female patients and 42 [27.8%]

male patients). Only six (4%) were Indigenous Australian patients.

A summary of the characteristics of the participating patients is presented in *Table 1*. Females and males had similar profiles with respect to individual risk factors and overall AUSDRISK scores. Just over 39% (95% CI: 31–47%) of the patients had AUSDRISK scores ≥15.

Table 2 shows the number of patients who had an oral glucose tolerance test and fasting blood glucose and their AUSDRISK scores. Using World Health Organization diagnostic criteria,[4] five patients were found to be diabetic (fasting blood glucose readings ranged from 7.0–17.8 mmol/L and AUSDRISK scores ranged from 19–23). Another four patients had impaired glucose tolerance on an oral glucose tolerance test (their AUSDRISK scores ranged from 15–20).

High blood pressure (BP) was common in this sample. Forty-nine patients were currently taking antihypertensive medications, of whom 26 had a systolic BP ≥140 mmHg and 15 of the 49 patients had a diastolic BP ≥90 mmHg. Of the 102 patients not taking antihypertensive medications, 15 had a systolic BP ≥140 mmHg and 12 of the 102 had a diastolic BP ≥90 mmHg.

Discussion

This survey of the GPs and general practice registrars in a single division of general practice had a 45.1% response rate. This is similar to other findings on the participation of GPs in research.[5–8] It is possible that the sample may be skewed toward those who had heard of or used AUSDRISK and not be representative, however, it was not only those who had heard of or used AUSDRISK that responded.

The proportion of patients at risk of diabetes in general practice is reportedly high.[9] In this survey, only 23% of GPs were aware of AUSDRISK and 14% of the respondents reported using AUSDRISK in their practice. Given the investment in its development[3] this is a disappointing result. General practice registrars were more likely aware of AUSDRISK than GPs, perhaps because of their training program. General practitioners may have been reluctant to screen their patients because they feel they do not have much to offer to patients they detect as having a high risk of developing diabetes. If the value of AUSDRISK is to be realised, GPs will need to see it as relevant and useful, and have accessible programs to assist patients to implement changes.

In the second stage of the study, we asked doctors to use AUSDRISK on every patient they saw on a single day. The low uptake rate might have been due to doctors selecting patients they felt were at highest risk, failing to ask patients

Table 1. Characteristics of the participating patients

Characteristics of patients		Female number (%)	Male number (%)
Age (years)	25–34	15	7
	35–44	19	7
	45–54	22	12
	55–64	27	9
	65–74	26	7
	Total	109 (72)	42 (28)
Family history of diabetes (type 1 or type 2)		30 (28)	14 (33)
Past history of high blood glucose level		13 (12)	7 (17)
Currently taking antihypertensive medication		34 (31)	15 (36)
Currently smoking cigarettes or any tobacco products on a daily basis		16 (15)	8 (19)
Do not eat vegetables daily		20 (18)	11 (26)
Do not do at least 2.5 hours of physical exercise per week		38 (35)	15 (36)
Waist circumference	Average (95% confidence interval)	93.8 cm (91.2–96.3 cm)	102.9 cm (99.1–106.8 cm)
	Above the lowest category*	70 (64)	26 (62)
AUSDRISK scores	0–5	21 (19)	2 (5)
	6–8	16 (15)	8 (19)
	9–14	37 (34)	8 (19)
	15–19	22 (20)	17 (40)
	20–38	13 (12)	7 (17)
	All age groups:** mean, median (minimum, maximum)	11.5, 11.0 (0, 28)	14.5, 16.0 (5, 26)

* The lowest category in AUSDRISK for Asian or Aboriginal subjects (men ≤90 cm, women ≤80 cm; for all others – men ≤102 cm, women ≤88 cm)[2]

** After adjusting the score for gender, the overall AUSDRISK scores were similar for both groups

Table 2. Number of patients diagnosed with diabetes and impaired glucose tolerance by AUSDRISK scores

AUSDRISK scores	6–8	9–14	15–19	20–38
Number of patients	24	45	39	20
Number of patients who had a fasting blood glucose test	9	32	28	14
Number of patients who had an oral glucose tolerance test	4	17	12	4
Number of patients diagnosed with diabetes*	0	0	1	4
Number of patients diagnosed with impaired glucose tolerance*	0	0	3	1

* The World Healtlh Organization 2006 criteria for diagnosis of diabetes and impaired glucose tolerance (IGT), ie. diabetes: fasting blood glucose ≥7.0 mmol/L or 2 hours oral glucose tolerance test (OGTT) ≥11.1 mmol/L; IGT: 2 hours OGTT ≥7.8 mmol/L but <11.1 mmol/L[4]

or patients declining to participate. The sample in this study may not be representative of all patients presenting in general practice but the results represent a snapshot of general practice patients with respect to risk profiles. Risk factors were very common as were high AUSDRISK scores. Twenty percent of the female patients and 40% of the male patients had an AUSDRISK score in the range of 15–19; and 12% of the female patients and 17% of the male patients had an AUSDRISK score ≥20.

A number of patients, who were not currently taking antihypertensive medication, were found to have systolic BP ≥140 mmHg. Of greater concern is that a number of patients reporting they currently take antihypertensive medication had elevated BP readings. Although our sample may not be representative, evidence of inadequate control of hypertension has been reported previously.[10,11] While some risk factors are not modifiable, other factors are, particularly hypertension and waist circumference, which have been shown to be useful predictors for type 2 diabetes.[12] Collection of this information represents an important health promotion opportunity in general practice.

Conclusion

AUSDRISK can be applied to screen patients for their risk of developing type 2 diabetes mellitus, and followed by appropriate blood tests to diagnose diabetes. However, awareness and application of AUSDRISK in general practice is low. It was shown in this small sample that a high AUSDRISK score may not just predict the risk of developing diabetes in the future, it may represent current undiagnosed diabetes.

Summary of main points

- The overall application rate of AUSDRISK in general practice is low.
- Compared to GPs, a higher proportion of general practice registrars is aware of and applies AUSDRISK.
- With its simple questions, together with a measure of waist circumference, AUSDRISK can be an easy way to screen patients for their risk of type 2 diabetes.

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