

## میزان بروز میکروآلبومینوری و عوامل خطر همراه در بیماران دیابتی نوع ۲

\*

چکیده

مقدمه:

( )

%

روش‌ها:

/ ± / / ± /

(HbA<sub>1c</sub>)

یافته‌ها:

( / / % ) « » /  
( P < / / )

نتیجه گیری:

واژگان کلیدی:

\* نشانی:

emrc@mui.ac.ir:

:

تاریخ دریافت مقاله: ۸۴/۱۱/۲۹

تاریخ پذیرش مقاله: ۸۵/۵/۵

مقدمه

%

%

[ ]

HbA<sub>1c</sub>

[ ]

%

( )

(BMI)

( )

/

/

[ ]

[ ]

(7<sup>th</sup>JNC) Serventh report of the joint

)

[ ] national committee

( )

(

روش‌ها

HDL

WHO

Chem enzyme

)

LDL

(

[ ] ATP3 . [ ]

(

LDL

HDL

(HbA<sub>1c</sub>)

Ione exchange)

DSS

(chromatography

[ ] ( )

WHO

[ ] ( )

Analyzer Medical System)

t-student

) Randox

(

جدول ۱- میانگین و انحراف معیار متغیرهای کمی مورد مطالعه در بیماران دیابتی نوع ۲ با و بدون میکروآلبومینوری در مدت پیگیری

با آلبومینوری	بدون آلبومینوری	
/ ± /	/ ± /	سن <sup>†</sup> (سال)
/ ± /	/ ±	BMI <sup>†</sup> (kg/m <sup>2</sup> )
/ ± /	/ ± /	مدت ابتلا* ( )
/ ± /	/ ± /	HbA <sub>1c</sub> * ( )
/ ± /	± /	قند خون ناشتا* (mg/dl)
/ ± /	/ ± /	قندخون ۲ ساعت بعد از غذا* (mg/dl)
/ ± /	/ ± /	کراتینین* (mg/dl)
/ ± /	/ ± /	کلسترول تام <sup>†</sup> (mg/dl)
/ ± /	/ ± /	تری گلیسرید <sup>†</sup> (mg/dl)
/ ± /	/ ±	LDL-C <sup>†</sup> (mg/dl)
/ ± /	/ ± /	HDL-C <sup>†</sup> (mg/dl)
/ ± /	/ ± /	فشار خون سیستولی* (mm/Hg)
/ ± /	/ ± /	فشار خون دیاستولی* (mm/Hg)
		*(P < / )
		†(P > / )
		± ± **

P < /

SPSS

جدول ۲- انسیدانس و خطر نسبی میکروآلبومینوری در رابطه با عوامل خطر مورد بررسی

جنس	تعداد کل	آلبومینوری	شخص - سال	انسیدانس در هزار	فاصله اطمینان ۹۵٪
			/	/	
			/	/	( / / ) / *
گروه سنی (سال)			/	/	
<			/	/	( / / ) /
			/	/	( / / ) /
≤			/	/	( / / ) /
مدت ابتلا به دیابت (سال)			/	/	
≤			/	/	( / / ) *
<			/	/	( / / ) / **
BMI (kg/m <sup>2</sup> )			/	/	
≤			/	/	( / / ) /
>			/	/	( / / ) /
HbA <sub>1</sub> C (درصد)			/	/	
≤			/	/	( / / ) / *
≤			/	/	( / / ) / *
پرفشاری خون			/	/	
			/	/	( / / ) / §
رتینوپاتی			/	/	
			/	/	( / / ) / §
درمان			/	/	
			/	/	( / / ) /
سیگار			/	/	
			/	/	( / / ) /

\*P < /

\*\*P < /

§P < /

†

HbA<sub>1c</sub>

یافته‌ها

(%) (%)

/ ± /

( ) ( P < / / ± / / ± / )

بحث

( )

% ) " " /

(

/ / )

( P < /

HbA<sub>1c</sub>

/

[ ]

/

[ ] Nelson [ ]

/ %

% / % /

LDL-C % /

[ ]

جدول ۳- متغیرهای مستقل تعیین‌کننده میکروآلبومینوری در بیماران دیابتی نوع ۲

فاصله اطمینان ۹۵٪ (CI)	ضریب شانس (OR)
/ /	/ * ( )
/ /	/ * ( )
/ /	/ ** (mmHg)
/ /	/ **

CI: Confidence interval  
OR : odds Ratio

\*P < /  
\*\* P < /

[ ]

[ ] Harris

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

### مآخذ

1. European Dialysis and Transplant Association. Report on management of renal failure in Europe, XXVI, 1995. *Nephrol Dial Transplant* 1996;11(Suppl 7):1-32.
2. Ritz E, Rychlik I, Locatelli F, Halimi S: End-stage renal failure in type 2 diabetes: a medical catastrophe of worldwide dimensions. *Am J Kidney Dis* 1999; 34:795-808
3. Raine AEG: Epidemiology, development and treatment of end-stage renal failure in type 2 (non-insulin-dependent) diabetic patients in Europe. *Diabetologia* 1993; 36:1099-1104
4. Remuzzi G, Schieppati A., Ruggenenti P, Nephropathy in Patients with Type 2 Diabetes. *N Engl J Med* 2002; 346: 1145-1151.

5. Nelson RG, Bennett PH, Beck GJ, Tan M, Knowler WC, Mitch WE, Hirschman GH, Myers BD: Development and progression of renal disease in Pima Indians with non-insulin-dependent diabetes mellitus. *N Engl J Med* 1996; 335: 1636-1642.
6. Parving HH, Chaturvedi N, Viberti G, Mogensen CE: Does microalbuminuria predict diabetic nephropathy? *Diabetes Care* 2002; 25: 406-407.
7. Mogensen CE: Microalbuminuria predicts clinical proteinuria and early mortality in maturity onset diabetes. *N Engl J Med*. 1984; 310:356-360
8. World Health Organization, Obesity: preventing and managing the global epidemic. Report of consultation obesity, Geneva 1998.
9. Chobanian AV; Bakris GL; Black HR; Cushman WC; Green LA; Izzo JL, Jr; and et al. Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension* 2003; 42: 1206-1210.
10. Friedwald WT, Levy RI, Fredridson DS. Estimation of the concentration of low-density lipoprotein cholesterol in plasma, without use of the preparative ultracentrifuge. *Clin Chem* 1972; 18: 499-502.
11. Executive Summary of the third report of the National cholesterol education program (NCEP III). Expert panel on detection, Evaluation and Treatment of high blood cholesterol in adult (Adult Treatment panel III) *JAMA* 2001; 285: 2486-2997.
12. American Diabetes Association: Clinical Practice Recommendations; *Diabetes Care* 2003; 26( Suppl 1): S83-86.
13. Guideline for controlling and monitoring: the tobacco epidemic. Geneva: *World Health Organization*; 1998.
14. Park JY, Kim HK, Chung YE, Kim SW, Hong SK, Lee KU. Incidence and determinants of microalbuminuria in Koreans with type 2 diabetes. *Diabetes Care* 1998 ; 21: 530-4.
15. John L, Rao PS, Kanagasabapathy AS. Rate of progression of albuminuria in type II diabetes. Five-year prospective study from south India. *Diabetes Care* 1994; 17: 888-90.
16. Nelson RG, Knowler WC, Pettitt DJ, Hanson RL, Bennett PH: Incidence and determinants of elevated urinary albumin excretion in Pima Indians with NIDDM. *Diabetes Care* 1995; 18: 182-187.
17. Bruno G, Cavallo-Perin P, Bargero G, Borra M, Calvi V, D'Errico N, Deambrogio P, Pagano G Prevalence and risk factors for micro- and macroalbuminuria in an Italian population-based cohort of NIDDM subjects. *Diabetes Care* 1996; 19: 43-7
18. Ballard DJ, Humphrey LL, Melton LJ, Frohnert PP, Chu CP, Ofallon WM. et al. Epidemiology of pertent proteinuria in type 2 diabetes mellitus. *Diabetes*; 1998: 405-12
19. Harris MI, Klein R, Welborn TA, Knudman MW . Onset of NIDDM occurs at least 4-7 yr before clinical diagnosis. *Diabetes Care* 1992; 15: 815-819.
20. Dasmahapatra A, Bale A, Raghuvanshi MP, Reddi A, Byrne W, Suarez S, Nash F, Varagiannis E, Skurnick JH. Incipient and overt diabetic nephropathy in African Americans with NIDDM. *Diabetes Care* 1994; 17: 297-304.
21. Torffvit O, Agardh E, Agardh CD. Albuminuria and associated medical risk factors: a cross-sectional study in 451 type II (noninsulin-dependent) diabetic patients. Part 2. *J Diabetes Complications* 1991; 5: 29-34.
22. Adler AI, Stevens RJ, Manley SE, Bilous RW, Cull CA, Holman RR: Development and progression of nephropathy in type 2 diabetes: the United Kingdom Prospective Diabetes Study (UKPDS 64). *Kidney Int* 2003; 63: 225-232.
23. Oue T, Namba M, Nakajima H, Ono A, Horikawa Y, Yamamoto K, et al. Risk factors for the progression of microalbuminuria in Japanese type 2 diabetic patients—a 10-year follow-up study. *Diabetes Research and Clinical Practice* 1999 : 47-55.
24. Gall MA, Hougaard P, Borch-Johnsen K, Parving HH. Risk factors for development of incipient and overt diabetic nephropathy in patients with non-insulin dependent diabetes mellitus: prospective, observational study. *BMJ* 1997; 314: 783-8.
25. Niskanen LK, Penttila I, Parviainen M, Uusitupa MI: Evolution, risk factors, and prognostic implications of albuminuria in NIDDM. *Diabetes Care* 1996; 19: 486-493.
26. Klein R. Hyperglycemia and microvascular and macrovascular disease in diabetes. *Diabetes Care* 1995; 18: 258-268.
27. Gall M-A, Borch-Johnsen K, Hougaard P, Nielsen FS, Parving H-H. Albuminuria and poor glycaemic control predict mortality in NIDDM. *Diabetes* 1995; 44: 1303-9.
28. Forsblom CM, Groop P-H, Ekstrand A, Tötterman KJ, Sane T, Saloranta C, Groop L: Predictors of progression from normoalbuminuria to microalbuminuria in NIDDM. *Diabetes Care* 1998; 21: 1932-1938.
29. Stratton IM, Adler AI, Neil HAW, Matthews DR, Manley SE, Cull CA, et al. Epidemiological association of glycaemia with macrovascular and microvascular complications of type 2 diabetes (UKPDS 35). *BMJ* 2000; 321: 405-412.
30. Effect of intensive glycemic control on microalbuminuria in type 2 diabetes. Veterans Affairs Cooperative Study on Glycemic Control and Complications in Type 2 Diabetes Feasibility Trial Investigators. *Diabetes Care* 2000; 23: 1478-85.
31. Diabetes Control and Complications (DCCT) Research Group. Effect of intensive therapy on the development and progression of diabetic nephropathy in the diabetes control and complications trial. *Kidney Int* 1995; 47: 1703-20.

32. Savage S, Estacio RO, Jeffers B, Schrier RW. Urinary albumin excretion as a predictor of diabetic retinopathy, neuropathy, and cardiovascular disease in NIDDM. *Diabetes Care* 1996; 19: 1243-8.
33. Agardh CD, Agardh E, Torffvit O. The prognostic value of albuminuria for the development of cardiovascular disease and retinopathy: a 5-year follow-up of 451 patients with type 2 diabetes mellitus. *Diabetes Res Clin Pract* 1996; 32: 35-44.
34. Cruickshanks K J, Ritter L L, Klein R, Moss S E. The association of microalbuminuria with diabetic retinopathy. The Wisconsin Epidemiologic Study of Diabetic Retinopathy. *Ophthalmology* 1993; 100: 862-867.
35. Haneda M, Kikkawa R, Togawa M, Koya D, Kajiwaru N, Uzu T, Shigeta Y. High blood pressure is a risk factor for the development of microalbuminuria in Japanese subjects with non-insulin-dependent diabetes mellitus. *J Diabetes Complications* 1992; 6: 181-5.
36. Schmitz A, Væth M, Mogensen CE. Systolic blood pressure relates to the rate of progression of albuminuria in NIDDM. *Diabetologia* 1994; 37: 1251-8.
37. Ravid M, Brosh D, Ravid-Safran D, Levy Z, Rachmani R. Main risk factors for nephropathy in type 2 diabetes mellitus are plasma cholesterol levels, mean blood pressure, and hyperglycemia. *Arch Intern Med* 1998; 158: 998-1004.
38. UKPDS Group. Tight blood pressure control and risk of macrovascular and microvascular complications in type 2 diabetes (UKPDS 38). *BMJ* 1998; 317: 703-713.
39. Lewis EJ, Hunsicker LG, Bain RP, Rohde RD. The effect of angiotensin-converting-enzyme inhibition on diabetic nephropathy. *N Engl J Med* 1993; 329: 1456-1462.
40. KPDS Group. Efficacy of atenolol and captopril in reducing risk of macrovascular and microvascular complications in type 2 diabetes (UKPDS 39). *BMJ* 1998; 317: 713-720.