

Differential impact of glomerular and tubulointerstitial histological changes on kidney outcome between non-proteinuric and proteinuric diabetic nephropathy

Fumihiro Fukata, M.D.¹, Masahiro Eriguchi, M.D., Ph.D.¹, Hiroyuki Tamaki, M.D.¹, Takayuki Uemura, M.D.¹, Hikari Tasaki, M.D.¹, Riri Furuyama, M.D.¹, Masatoshi Nishimoto, M.D., Ph.D.¹, Takaaki Kosugi, M.D., Ph.D.¹, Kaori Tanabe, M.D., Ph.D.¹, Katsuhiko Morimoto, M.D.², Ph.D., Keisuke Okamoto, M.D.¹, Masaru Matsui, M.D., Ph.D.³, Ken-ichi Samejima, M.D., Ph.D.¹, Kazuhiko Tsuruya, M.D., Ph.D.¹

1. Department of Nephrology, Nara Medical University

2. Department of Nephrology, Nara Prefecture Seiwa Medical Center, Nara, Japan

3. Department of Nephrology, Nara Prefecture General Medical Center, Nara, Japan

Running title: Histology and kidney outcome in DKD

Corresponding author: Masahiro Eriguchi, MD, PhD

Department of Nephrology, Nara Medical University

840 Shijo-cho, Kashihara, Nara, 634-8521, Japan

Tel: +81-744-29-8865 Fax: +81-744-23-9913

E-mail: meriguci@gmail.com

Supplemental materials

Figure S1 Association of ESKD with GL or IFTA among proteinuric and non-proteinuric DN, with death as a competing risk.

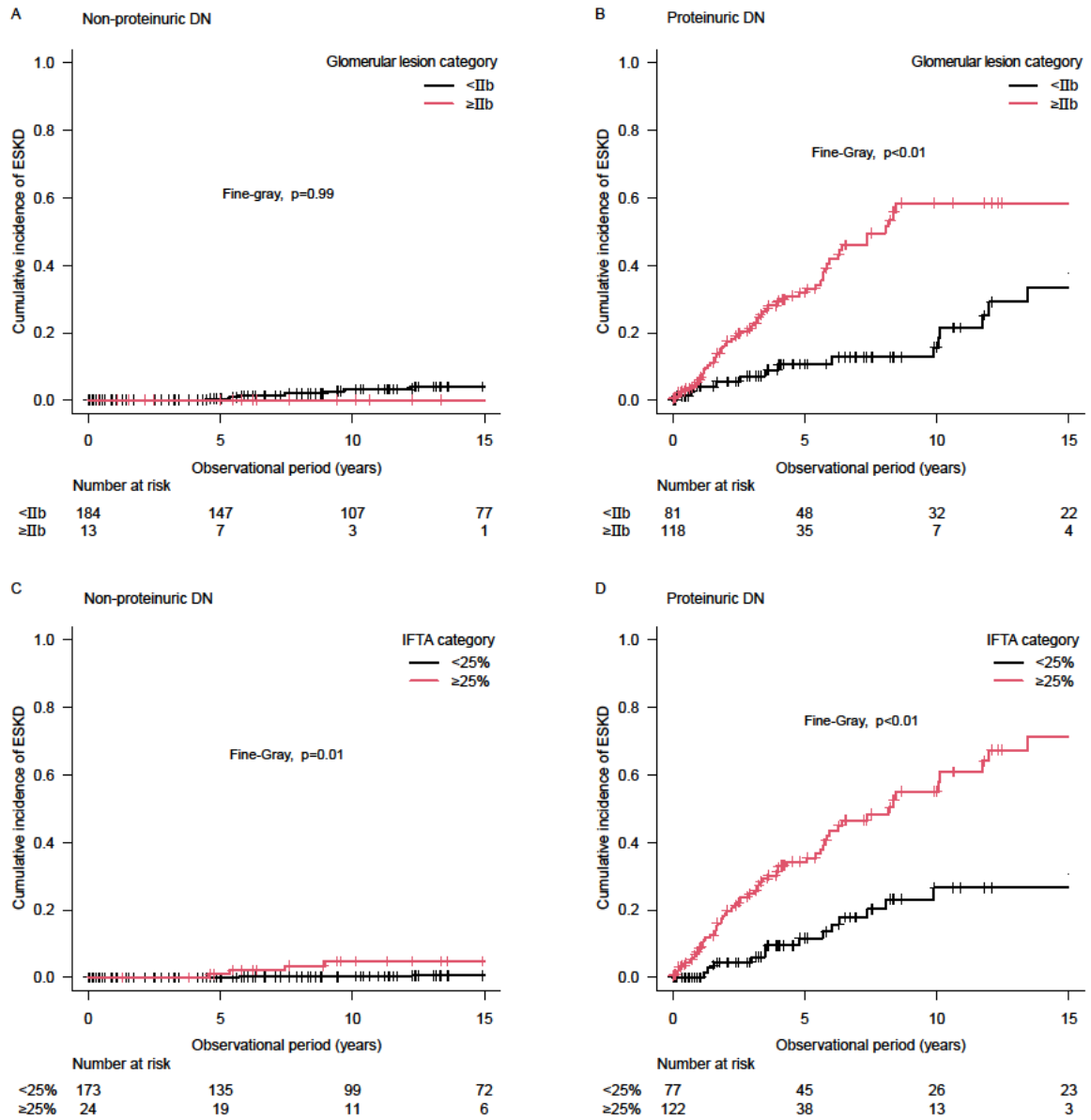


Figure legends : Cumulative incidence curves for ESKD between the GL categories in non-proteinuric DN (a) and proteinuric DN (b). Cumulative incidence curves for ESKD

between IFTA categories in non-proteinuric DN (c) and proteinuric DN (d). The severe GL or IFTA was significantly associated with a higher incidence of ESKD in the proteinuric DN. In non-proteinuric DN, severe IFTA but not GL was significantly associated with a higher incidence of ESKD, similar to the results of Fig. 1.

Abbreviations: DN: diabetic nephropathy; GL: glomerular lesion; IFTA: interstitial fibrosis and tubular atrophy; ESKD: end-stage kidney disease.

Table S1. Association of renal histology with ESKD in non-proteinuric DN and proteinuric

DN when considering death as a competing risk.

		Crude	Model 1	Model 2	Model 3
Non-proteinuric DN	GL (IIb or higher)	<0.01 (0.00–0.00)	<0.01 (0.00–0.00)	<0.01 (0.00–0.00)	<0.01 (0.00–0.00)
	IFTA (\geq 25%)	5.33 (1.83–15.51)	5.84 (1.67–20.37)	4.60 (1.41–15.0)	6.79 (1.30–35.44)
Proteinuric DN	GL (IIb or higher)	3.31 (1.91–5.77)	3.05 (1.82–5.10)	2.43 (1.42–4.17)	2.46 (1.42–4.25)
	IFTA (\geq 25%)	3.08 (1.83–5.17)	3.42 (1.96–5.98)	3.18 (1.76–5.75)	3.03 (1.64–5.59)

Results are shown as hazard ratio (95% confidence interval) for ESKD.

N=396 patients and 99 ESKD events.

Model 1 adjusted for age and sex.

Model 2 adjusted for model 1 factors + body mass index, estimated glomerular filtration rate, and systolic blood pressure.

Model 3 (main model) adjusted for model 2 factors + hyalinosis and intimal thickening.

Abbreviations: DN: diabetic nephropathy; GL: glomerular lesion; IFTA: interstitial fibrosis and tubular atrophy; ESKD: end-stage kidney disease.