SUPPLEMENTARY DATA

Rationale of the BLR package:

BLR package: The 'BLR' package is based on the Bayesian inference in the sense that an interested effect or association measure is thought to be random, varying with the different samples drawn from the population. Therefore, the interested effect or association measure is assumed to come from a distribution rather than a fixed number.

Prior distribution used in the BLR package: A flat uniform prior was assigned to the effect (association) measure of Ad36 infection. The flat uniform prior is commonly employed when researchers have no compelling information about the distribution of the interested effect (association) measure. This prior takes all permissible values with equal prior probability.

Posterior distribution: A posterior distribution is a distribution of an interested parameter, the effect (association) measure of Ad36 infection in this study, given the observed data. Samples from the posterior distribution were obtained using a Gibbs sampler (1) implemented by BLR. The mean and SD listed in Table 2 were obtained via these samples of the posterior distribution.

Rationale of the Pedigreemm package:

Pedigreemm package: With mixed-effect models, the correlation among the three repeated measurements of a subject was modeled as exchangeable. That is, the correlation of 1st and 2nd measurements = the correlation of 1st and 3rd measurements = the correlation of 2nd and 3rd measurements.

SUPPLEMENTARY DATA

Supplementary Table 1. A summary of indices of adiposity and glycemic control of Ad36 seropositive subjects, compared to seronegative subjects. For analyses on glycemic control, only the non-diabetic subjects were included.

Category[1]	All BMI	BMI ≤ 25	25 < BMI ≤ 30	BMI > 30
Men & women	Greater body fat % at baseline [2] Greater body fat % based on longitudinal observations[2] Lower fasting insulin based on longitudinal observations [3]	Lower fasting glucose at baseline [3] Lower fasting insulin at baseline [3] Lower fasting insulin based on longitudinal observations [3]		
Men	Lower fasting insulin based on longitudinal observations [3]		Greater BMI based on longitudinal observations [2] Greater body fat % based on longitudinal observations [2] Lower fasting insulin based on longitudinal observations [3]	Greater BMI at baseline [2] Greater BMI based on longitudinal observations [2]
Women		Lower fasting glucose at baseline [3] Lower fasting insulin at baseline [3] Lower fasting insulin based on longitudinal observations [3]		

[1] Categorized with baseline BMI;   [2] Controlled for age;   [3] Controlled for age and BMI

SUPPLEMENTARY DATA

Supplementary Table 2. Longitudinal data analyses for fasting glucose and insulin on non-diabetic and diabetic subjects (diabetes status was adjusted in the model).

Category[1]	BMI All		BMI ≤ 25		25 < BMI ≤ 30		BMI > 30	
	Mean ± SD [2]	p	**Mean ± SD**	p	**Mean ± SD**	p	**Mean ± SD**	p
Natural log of fasting glucose (Men & women)	-15.7 ± 12.2 [3]	0.099	**-31.8 ± 15.3**	**0.019**	2.4 ± 21.0	0.544	-2.7 ± 24.0	0.456
Natural log of fasting glucose(Men)	-32.1 ± 21.6	0.068	-29.7 ± 25.6	0.123	-57.6 ± 35.8	0.054	15.8 ± 54.6	0.614
Natural log of fasting glucose (Women)	-0.4 ± 15.0	0.488	-15.0 ± 17.9	0.200	36.0 ± 25.4	0.922	-2.5 ± 26.8	0.464
Natural log of fasting insulin (Men & women)	-24.6 ± 36.1	0.248	**(-11.8±5.1) ×(Age-33)** [4]	**0.010**	-51.9 ± 68.2	0.223	-9.2 ± 57.6	0.437
Natural log of fasting insulin (Men)	-89.0 ± 66.9	0.092	-33.0 ± 112.3	0.384	-155.2 ± 112.0	0.083	-165.5 ± 136.3	0.112
Natural log of fasting insulin (Women)	12.1 ± 44.7	0.606	**(-19.4±7.5) ×(Age-33)**	**0.005**	-10.0 ± 89.4	0.455	20.1 ± 63.8	0.623

[1] Subjects were categorized with their baseline BMIs.

[2] Mean and SD of the differences in fasting glucose and insulin, between Ad36 seropositive and seronegative subjects.

[3] All Means and SDs in this table were multiplied by 1000. A cell with no function of age means that the effect (association) measure of Ad36 is not significantly modulated by age. Therefore, we chose the simpler model based on the principle of simplicity (2). In the model, the fixed-effect predictor variables were Ad36 infection, age, sex, BMI, and diabetes status.

[4] A cell with a function of age means that the effect (association) measure of Ad36 is modulated by age. In the model, the fixed-effect predictor variables were Ad36 infection, age, sex, BMI, diabetes status, and Ad36 infection×age.

SUPPLEMENTARY DATA

REFERENCES

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