



Fulminant type 1 diabetes: nationwide effort to elucidate genetics, etiology, and pathogenesis since 2000

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Since the first report on fulminant type 1 diabetes by Imagawa et al. in 2000 [1], Japanese research led by the Committee on Type 1 Diabetes, Japan Diabetes Society, has revealed the disease's genetics, etiology, and pathogenesis. As current chairpersons of the committee, we would like to take this opportunity to thank all the participants

and members actively involved in the nationwide studies orchestrated by the committee. We also thank the Japan Diabetes Society for its continuous support and encouragement. The knowledge presented in this special issue could only be obtained with the shared effort of all these individuals and institutions.

Table 1 Studies on fulminant type 1 diabetes conducted by the Committee on Type 1 Diabetes, Japan Diabetes Society

Committee chairpersons	Year	Title	Journal
2000–2007 Makino H	2003	Fulminant type 1 diabetes: a nationwide survey in Japan	Diabetes Care 2003; 26:2345–52
	2005	Different contribution of class II HLA in fulminant and typical autoimmune type 1 diabetes mellitus	Diabetologia 2005;48:294–300
	2006	Clinical and immunogenetic characteristics of fulminant type 1 diabetes associated with pregnancy	J Clin Endocrinol Metab 2006; 91:471–6
2007–2012 Hanafusa T, Kobayashi T (co-chair)	2007	Fulminant type 1 diabetes as a high risk group for diabetic microangiopathy—a nationwide 5-year-study in Japan	Diabetologia 2007; 50:531–7
	2008	Uniformity in clinical and HLA-DR status regardless of age and gender within fulminant type 1 diabetes	Diabetes Res Clin Pract 2008; 82:233–7
	2008	Nationwide survey to compare the prevalence of transient elevation of liver transaminase during treatment of diabetic ketosis or ketoacidosis in new-onset acute and fulminant type 1 diabetes mellitus	Ann Med 2008; 40:395–400
	2009	Differential association of HLA with three subtypes of type 1 diabetes: fulminant, slowly progressive and acute-onset	Diabetologia 2009; 52:2513–21
	2010	Serum glycated albumin to haemoglobin A(1C) ratio can distinguish fulminant type 1 diabetes mellitus from type 2 diabetes mellitus	Ann Clin Biochem 2010; 47:313–7

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Table 1 continued

Committee chairpersons	Year	Title	Journal
2012–2018 Hanafusa T, Kobayashi T (co-chair)	2012	Class II HLA genotype in fulminant type 1 diabetes: A nationwide survey with reference to glutamic acid decarboxylase antibodies	J Diabetes Invest 3:62–69, 2012
	2012	High frequency of HLA B62 in fulminant type 1 diabetes with the drug-induced hypersensitivity syndrome	J Clin Endocrinol Metab 2012; 97:E2277-81
	2012	Report on the committee of the Japan Diabetes Society on the Research of fulminant and acute-onset type 1 diabetes mellitus: new diagnostic criteria of fulminant type 1 diabetes mellitus (2012)	J Diabetes Investig 2012; 3:536–9
	2013	The glycated albumin to HbA1c ratio is elevated in patients with fulminant type 1 diabetes mellitus with onset during pregnancy	J Med Invest 2013; 60:41–5
	2015	Risk factors for sudden death and cardiac arrest at the onset of fulminant type 1 diabetes mellitus	Diabetol Int 2015;7:281–288
2018- Ikegami H	2018	Diffusion-weighted magnetic resonance imaging in the pancreas of fulminant type 1 diabetes	Diabetol Int 2018; 9:257–265
	2018	Characteristics and clinical course of type 1 diabetes mellitus related to anti-programmed cell death-1 therapy	Diabetol Int 2018; 10:58–66
	2019	Genome-wide association study confirming a strong effect of HLA and identifying variants in CSAD/Inc-ITGB7-1 on chromosome 12q13.13 associated with susceptibility to fulminant type 1 diabetes	Diabetes. 2019; 68:665–675

A prominent trait of fulminant type 1 diabetes is the evident variation in disease incidence among different populations [2]. The majority of patients belong to East Asian populations, while in Europe, only a limited number of cases have ever been reported. The lack of European fulminant type 1 diabetes cases indicates that the disease can only be studied in East Asian populations. In Japan, nationwide studies led by the Committee on Type 1 Diabetes have greatly contributed to the fundamental knowledge of the disease's epidemiology, clinical characteristics, genetics, etiology, and pathogenesis (Table 1) [3–7]. Although a large amount of information on fulminant type 1 diabetes is now available, much remains to be clarified. Thus, the continuation of the Japanese nationwide research effort is essential to establish effective methods for disease prediction, prevention, and intervention. Finally, we would like to ask all the people in the field of diabetes research and the Japan Diabetes Society for their continued support.

Compliance with ethical standards

Conflict of interest Hiroshi Ikegami is the Chairman of the Committee on Type 1 Diabetes, Japan Diabetes Society. Akihisa Imagawa and Akira Shimada are Vice-chairmen of the Committee on Type 1 Diabetes, Japan Diabetes Society. A.S. has received lecture fees from Astellas Pharm Inc., Eli Lilly Japan K.K., Ono pharmaceutical Co., Ltd., Terumo Corporation and Sanofi K.K. A.S. has received research funding from Astellas Pharm inc. and Mitsubishi Tanabe Pharma Cor-

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Ethics policy This article does not contain any studies with human or animal subjects performed by any of the authors.

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