

Basic Science Physical Poster Presentation

PP_B001

DIABETIC AUTOANTIBODY TESTING IN MALAYSIA: TIME FOR A PARADIGM CHANGE

<https://doi.org/10.15605/jafes.038.S2.112>

Saraswathy Apparow,¹ Ker Yang Chua,² Poi Giok Lim,² Vengketeswara Rao Seetharaman,³ Shamharini Nagaratnam,⁴ Janet Yeow Hua Hong⁵

¹Endocrine Unit, Institute of Medical Research, Kuala Lumpur, Malaysia

²Department of Paediatrics, Hospital Tunku Azizah, Kuala Lumpur, Malaysia

³District Health Clinic, Hulu Selangor, Malaysia

⁴Department of Medicine, Hospital Putrajaya, Putrajaya, Malaysia

⁵Department of Paediatrics, Hospital Putrajaya, Putrajaya, Malaysia

INTRODUCTION

The positivity of at least one pancreatic islet cells autoantibodies is a marker for diagnosis of type 1 diabetes mellitus (T1DM) and latent autoimmune diabetes of adults (LADA). The Endocrine Lab at the Institute of Medical Research (IMR) offers diabetes autoantibodies testing for all government hospitals and health clinics in Malaysia. This includes islet cell cytoplasmic autoantibodies (ICA), anti-glutamic acid decarboxylase 65 antibodies (anti-GAD65) and anti-insulinoma associated protein-2 (anti-IA2) as 3-panel testing and Insulin autoantibodies (IAA) tested on immunoassay platform.

METHODOLOGY

A retrospective study was conducted on the diabetes autoantibodies requests from 1 January 2021 until 31 March 2023 and the data was obtained from the laboratory information system in IMR.

RESULT

A total of 5903 patients with diabetes had autoantibodies testing and 1221 (20.6%) patients demonstrated at least one positive autoantibody (ICA/ anti-GAD65/ anti IA2). However, only 347 (5.9%) patients tested positive for all 4 autoantibodies (ICA, GAD65, anti IA2 and IAA). Thirty-one of 87 (35.6%) patients demonstrated IAA positivity with negative 3 autoantibodies (ICA, GAD65, anti IA2) panel testing. After excluding 22 patients with possible insulin exposure (unknown or confirmed), there were still 9/65 (13.8%) with only IAA-positive and negative 3 autoantibodies panel who were insulin naïve patients. Cohen's kappa statistical analysis was performed to test concordance between current 3-panel test (ICA, antiGAD65 and anti-IA2) and testing all 4 autoantibodies as panel. There was substantial agreement between both combinations, $\kappa=0.73$, (95% CI, 0.64 to 0.82). Alternatively, testing the combination of IAA, anti-IA2 and anti-GAD65 against all 4 autoantibodies showed perfect agreement, $\kappa=1$ (95%CI, 1 to 1).

CONCLUSION

The current 3 autoantibodies testing panel could miss between 13.8% to 35.6% patients who showed IAA positivity and 3 panel autoantibodies negativity. Ideally, testing for all 4 autoantibodies may be considered.