Autologous islet cell transplantation for chronic pancreatitis: cleveland clinic experience

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INTRODUCTION

• Total pancreatectomy (TP) with islet cell autotransplantation (IAT) can reduce or prevent diabetes by preserving beta cell function, and is normally performed with on-site isolation laboratory facilities.

• We examined factors associated with islet yield and metabolic outcomes in patients with chronic pancreatitis undergoing TP-IAT. We report our experience of TP-IAT with an off-site islet isolation laboratory.

METHODS

• Data (August 2008 - February 2014) were obtained from a TP-IAT database which included information from medical records, clinic visits, questionnaires and follow-up telephone calls.

• Each patient was assessed with pre- and post-operative 5-hour mixed-meal tolerance tests for metabolic measurements and with serial HbA1c determinations.

• Islet cell isolation performed off-site.

• Statistical analyses were performed using SAS software (Version 9.2; Cary, NC).

RESULTS

• Thirty-six patients with a mean age of 38 years (range 16-72 years) underwent TP-IAT for different etiologies (Table 1).

• At a median follow-up time of 28 months (range 3-66), 12 patients were insulin independent and 24 patients were on at least one insulin injection a day (Table 2).

• Pre-operative HbA1c and peak glucose levels during the pre-operative mixed-meal tolerance tests inversely correlated with islet yields (Figure 1).

• Patients with normal or minimal disease extent had higher islet yields in comparison to those with advanced changes (Figure 2).

CONCLUSION

• Islet cell autotransplantation after total pancreatectomy performed in our facility with an off-site islet isolation laboratory shows islet yield and rates of insulin independence that are comparable to other large centers with on-site laboratories.

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