Final Assignment 2014

This study contains the results of patients with chronic pancreatitis who underwent a pancreatectomy without or with ‘Auto-Islet’ transplantation.

The intention of this study is to access the impact of ‘Auto-Islet’ transplantation on wellbeing of the patient which was measured with the quality of life questionnaire SF36. In the control group of patients without Auto-Islet transplants no SF36 information is available. Of interest are the change in pain in the Auto-Islet transplant patients, and the oval change in physical and mental wellbeing.

In addition the rate of hospital and emergency room readmissions for the 2 groups should be studied.To answer those question following data sets are available:

Patient.SAS7BDAT

PatID Case identifier

Age Date of Birth

Gender Patient Gender

White Patient race

Hispanic Patient race

AfricanAm Patient race

Asian Patient race

NativeAm Patient race

OtherRace Patient race

Diagnosis.SAS7BDAT

PatID Case identifier

Pancreatitis1 Pancreatitis etiology

Pancreatitis\_Yr Year of diagnosis

Surgery. SAS7BDAT

PatID Case identifier

Surgery\_dt Date of pancreatectomy

Extent\_Pxtmy Extent of pancreatectomy

AutoIsletTx Auto-Islet transplant perform (Y/N)

Tx\_site\_1 Infusion site for Auto-Islets

Ht\_pre Initial height [m]

Wt\_pre Initial weight [kg]

Islets. SAS7BDAT

PatID Case identifier

IEQ Islet equivalent (computed number of islets)

SF36. SAS7BDAT

PatID Case identifier

FU\_dt Date of follow-up (questionnaire taken)

PF Physical function

RP Role physical

RE Role emotional

VT Vitality

MH Mental health

SF Social function

BP Bodily pain

GH General health

Readmin. SAS7BDAT

PatID Case identifier

Readm\_dt Date of readmission

Admission\_reason1 Admission reason

Treatment Treatment(Surgical/Conservative)

ER Readmission to emergency room (0=no/1=yes)

Prepare data sets to answer following questions:

1. Perform a thorough data clean up. How many patients received only a pancreatectomy and how many patients in addition an ’Auto-Islet’ transplant?
2. Describe the initial characteristics of the pancreatectomy and Auto-Islet group (age, gender, BMI, diagnosis, duration of disease). Create one variable to describe the race of the patient.
3. Standardize the 8 dimensions of the SF36 and compute the physical (PCS) and mental (MCS) component of the SF36.

/\*Standardize \*/

PF\_Z = (PF - **84.52404**) / **22.89490** ;

RP\_Z = (RP - **81.19907**) / **33.79729** ;

BP\_Z = (BP - **75.49196**) / **23.55879** ;

GH\_Z = (GH - **72.21316**) / **20.16964** ;

MH\_Z = (MH - **74.84212**) / **18.01189** ;

RE\_Z = (RE - **81.29467**) / **33.02717** ;

SF\_Z = (SF - **83.59753**) / **22.37642** ;

VT\_Z = (VT - **61.05453**) / **20.86942** ;

/\*create physical and mental health component score \*/

PCS = (PF\_Z \* **0.42402**) + (RP\_Z \* **0.35119**) + (BP\_Z \* **0.31754**) +

(GH\_Z \* **0.24954**) + (MH\_Z \* -**.22069**) + (RE\_Z \* -**.19206**) +

(SF\_Z \* -**.00753**) + (VT\_Z \* **0.02877**);

MCS = (PF\_Z \* -**.22999**) + (RP\_Z \* -**.12329**) + (BP\_Z \* -**.09731**) +

(GH\_Z \* -**.01571**) + (MH\_Z \* **0.48581**) + (RE\_Z \* **0.43407**) +

(SF\_Z \* **0.26876**) + (VT\_Z \* **0.23534**);

/\* create the score \*/

PCS = **50** + (PCS \* **10**);

MCS = **50** + (MCS \* **10**);

1. To show the change over time create a box-plot for bodily pain (BP\_Z), MCS, and PCS for time points 0, 3month and 6 month after surgery.
2. Can you find a relationship between islet gain (IEQ) and duration of disease and body mass index of the patient? Show the relationship graphically.
3. Is there a significant change between baseline and 6 month post-surgery of bodily pain?
4. How many patients in the 2 groups were readmitted overall and to the ER during the first month after surgery, and during the first 6 month after surgery?

The results should be produced in a presentable Word document and when possible should be accompanied with graphs. In addition, the SAS code should also be handed in.