Analysis of U.S. Data (1/1/99 – 12/31/99) Regarding Olanzapine and Hyperglycemia

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*COSTART terms mapped to

- Hyperglycemia
- Diabetes Mellitus
- Diabetic Coma
- Diabetic Acidosis

Group 1: Patients Without a Prior History of Diabetes/Hyperglycemia Before Initiating Olanzapine (1/1/99 through 12/31/99)

Case #	CLINTRACE ID	COSTART TERMS	AGE/ SEX	HT/ WT(#)	PEAK B.S./ HgbA1C	OB	FH	AL	GD	WG	CDT	P	R/LF	DD?	PD?
1	US_990217111	Hyperglycemia	45/F	--	400 (R)	Y					--				
2	US_990319516	Hyperglycemia	28/F	5'4"/210	189(F)/8.4%	Y				Y					
3	US_990319977	Hyperglycemia	54/F	--	17%		Y								
4	US_990521825	Hyperglycemia/ Diabetes M.	65/M	5'11"/200	407(R)/10.3%									Y	
5	US_990521985	Hyperglycemia	31/F	5'/200	133 (R)	Y	Y			Y					
6	US_990522068	Hyperglycemia	45/F	--	700 (R)	Y					Y				Y
7	US_990522540	Hyperglycemia/ Diabetes M.	36/M	6'/150	1000 (R)									Y	
8	US_990522556	Hyperglycemia/ Diabetic Coma	41/M	--	1033 (R)									Y	
9	US_990623491	Hyperglycemia	17/F	5'8"/180	173 (F)					Y					
10	US_990624169	Hyperglycemia	70/F	--/210	295 (R)	?					Y				
11	US_990725037	Hyperglycemia	48/M	5'9"/190	405(F)/11.2%			Y						Y	
12	US_990725071	Hyperglycemia/ Diabetes M./ D.Acidosis	41/M	6'/210	800 (R)									Y	
13	US_990725112	Hyperglycemia	53/M	5'8"/180	220 (F)					Y				Y	
14	US_990725121	Hyperglycemia	34/F	6'/190	464(F)/12.8%									Y	
15	US_990725129	Hyperglycemia	37/M	6'/180	395(F)/14.2%		Y	Y			Y				Y
16	US_990725709	Hyperglycemia	40/M	--	139 (F)					Y					
17	US_991029935	Hyperglycemia	21/M	5'9"/180	400 (R)									Y	
18	US_991130821	Hyperglycemia	19/F	5'5"/170	280 (R)		Y								
19	US_991233035	Hyperglycemia/ Diabetic Coma	56/M	5'8"/160	400 (R)			Y						Y	
20	US_990319151	Hyperglycemia	51/F	--	204 (R)										Y

OB=Obesity **FH=Family history of diabetes/hyperglycemia**
AL=Alcoholism **GD=Hx of Gestational Diabetes**
WG=Recent weight gain (>10 kg)
CDT=Concomitant drug therapy with predisposition to hyperglycemia
P=Pancreatitis/Pancreatic problems
DD?=Was a diabetic drug (insulin, sulfonylurea, etc.) added to the patient's drug regimen for treatment of hyperglycemia? (on an outpatient basis)
PD?=Did a positive dechallenge occur? (with all other factors remaining the same)

Case #	CLINTRACE ID	COSTART TERMS	AGE/ SEX	HT/ WT(#)	PEAK B.S./ HgbA1C	OB	FH	AL	GD	WG	CDT	P	R/LF	DD?	PD?
21	US_990115610	Hyperglycemia	68/F	5'1"/150	279 (R)										
22	US_990115384	Diabetes M.	13/M	5'8"/240	500 (R)	Y				Y				Y	
23	US_990116499	Diabetes M.	18/F	--/200	280 (R)	?				Y				Y	
24	US_990116671	Diabetes M.	34/M	--	1400 (R)							?		Y	
25	US_990217073	Diabetes M.	40/M	5'10"/270	8.0%	Y	Y							Y	
26	US_990319390	Diabetes M.	24/M	--	340 (R)					Y	Y			Y	
27	US_990420503	Diabetes M.	62/F	5'2"/190	400 (R)/ 14.1%	Y								Y	
28	US_990421544	Diabetes M.	59/F	--	352 (R)									Y	
29	US_990522943	Diabetes M./ D.Acidosis	21/M	6'2"/350	208 (F)	Y								Y	
30	US_990725399	Diabetes M.	39/M	5'10"/190	713 (R) 18.0%			Y						Y	
31	US_990827255	Diabetes M.	38/F	--	1100 (R)									Y	
32	US_990927542	Diabetes M.	45/M	--	345 (R)						Y				
33	US_991029836	Diabetes M./ D.Acidosis	38/M	5'7"/160	1210 (R)						Y				Y

Table Summary:

All cases were stratified into 3 groups:

1. Patients without a previous diagnosis of diabetes or a previous history of hyperglycemia. (based on ADA guidelines: fasting BG>126 or random BG>160.) **(33/89 or 37%)**

2. Patients with a previous diagnosis of diabetes or a previous history of hyperglycemia. **(19/89 or 21%)**

3. Patients with case narratives having incomplete/missing information pertinent to differentiating between Groups 1 and 2. (past medical history, actual lab values, concurrent medications, etc.) **(37/89 or 42%)**

All Group 1 patients were "screened" for the following risk and confounding factors:

Risk:

1. Current diagnosis of obesity or a BMI $\geq$ 27 kg/m^2
2. Family history of diabetes
3. History of recent alcohol abuse/alcoholism
4. History of gestational diabetes mellitus or delivery of a baby over 9#
5. Recent weight gain of over 10 kg

"Confounding" factors that could predispose a patient to hyperglycemia:

1. Concomitant drug therapy with a predisposition to hyperglycemia
   - Lithium
   - Glucocorticoids
   - Estrogens/Oral contraceptives
   - Thyroid Hormones
   - Furosemide/Bumetanide
   - Thiazide diuretics
   - Phenothiazines
   - Amiodarone
   - Phenytoin
2. Recent history or current episode of pancreatitis
3. Recent history or current episode of hepatic or renal failure
4. Recent history or current episode of sepsis or extreme stress/sickness
5. Present TPN use
6. Existing cancerous state (esp. lung, pancreatic, and hepatic cancer)

Points to consider:

1. 10/89 cases (11%) reviewed could not be "ruled out" due to additional risk/confounding factors. ***(shaded rows)***

2. The issue of weight gain can be argued as a risk factor or as an expected side effect of olanzapine therapy. (This would add an additional 2-3 cases)

3. Of the 33 patients who had never experienced a hyperglycemic event before receiving olanzapine, 19 had to continue taking an anti-diabetic drug to maintain normal BG levels. (56%)

4. Four of the thirty-three patients experienced a "clean" Positive Dechallenge when olanzapine therapy was withdrawn.