Clinical Experience with BIAsp 30: Results from the Philippine Cohort of the Global A_1chieve Study

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Abstract

Objective: To evaluate the safety, effectiveness and health-related quality of life (HRQoL) parameters of A_1chieve study participants in the Philippine cohort, who were treated with BIAsp 30.

Methodology: A_1chieve is a non-interventional, six-month, observational study of 66,726 people with type 2 diabetes mellitus (T2DM), including both insulin users and non-insulin users, started on insulin detemir, insulin aspart, or BIAsp 30 in 28 countries across four continents. The present study evaluates the safety, effectiveness and HRQoL in 1,252 subjects from the Philippine cohort of the A_1chieve study who were treated with BIAsp 30.

Results: At baseline, the mean age, duration of diabetes and mean BMI were found to be 55.5± 11.7 years, 7.2 ± 5.6 years and 25.4 ± 5.3 kg/m^2, respectively. Seventy-eight percent (78%) of subjects were insulin naïve and 22% were prior insulin users. At baseline, glycemic control was poor (HbA_{1c} = 9.9%) in the entire cohort. Overall there was a 2.7% reduction in mean HbA_{1c} and 44.2% subjects achieved the HbA_{1c} target of <7.0%, after 24 weeks of therapy with BIAsp 30. There were significant reductions in total cholesterol, LDL-cholesterol, triglycerides and systolic blood pressure after 24 weeks of therapy with BIAsp 30. There was no increase in the incidence of hypoglycemia among insulin-naïve subjects, while there was a marked reduction in hypoglycemia (4.93 to 2.53 events/person-year) among prior insulin users at 24 weeks.

Conclusion: BIAsp 30 is safe and efficacious for initiating and intensifying insulin therapy for Filipino T2DM patients.

Keywords: A_1chieve, HbA_{1c}, glucose control, type 2 diabetes mellitus, BIAsp 30, Philippines.

Introduction

Chronic hyperglycemia often precedes diagnosis of type 2 diabetes mellitus (T2DM), leading to extensive vascular damage and early development of clinical complications.[1] In addition, absence of good glycemic control while on therapy, and the resulting metabolic imbalances further deteriorate the clinical condition of these patients.[2,3] The Philippines has an estimated diabetes prevalence of 4.6%, affecting around 3.9 million individuals. Peripheral arterial disease, a macrovascular complication, is also widespread among the Filipinos.[4] Diabetes mellitus (DM) caused 8,819 deaths in 1998 and was ranked the eighth leading cause of mortality in the Philippines.[5] In a developing country like the Philippines, suboptimal management of T2DM and subsequent complications impose a significant burden on the existing healthcare resources.

β-cell function in T2DM declines progressively and eventually fail, thereby, requiring most patients to receive insulin therapy.[6] It has been reported that about 80% of T2DM require some form of insulin therapy within nine years of diagnosis.[4,7] The joint consensus of the European Association for the Study of Diabetes and the American Diabetes Association (EASD-ADA) recommends that HbA_{1c} above 7.0% warrants an action to initiate or change therapy to achieve target HbA_{1c}.[6] Thus, early initiation of insulin to reach glycemic targets without compromising safety should be considered as an alternative option.

An increasing body of evidence also suggests that early intensive glycemic control reduces long-term vascular outcomes and may potentially prolong β-cell lifespan and function.[6] In view of the progressive nature of the disease, continuous monitoring of glycaemia and, when necessary, intensification of existing treatment is imperative for achieving HbA_{1c} control. One option is to intensify to a modern premixed insulin analogue, without increasing the number of injections as in the basal–bolus regimen.[7]

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The premixed insulin analogue, biphasic insulin aspart 30 (BIAsp 30), consists of a rapid-acting soluble insulin (30%) which effectively controls post-prandial glucose (PPG) and a long-acting protaminated insulin (70%) which controls basal glucose.[8] BIAsp 30 has a low incidence of hypoglycemia and therefore allows for convenient and flexible mealtime dosing.[8,9] Although many randomised controlled trials (RCTs) have shown the beneficial effects of BIAsp 30, this needs to be confirmed in routine clinical practice among different patient populations, varying stages of disease, co-morbidities, and multiple medications.[9] Observational studies can complement data from RCTs by providing insight on how a well-studied treatment regimen perform or vary in more clinically representative patient populations.[10,11] The A_1chieve study is one of the largest observational studies on insulin therapy to date. It is designed to assess the real-life safety and effectiveness of insulin analogues in large diabetic populations (more than 65,000 insulin-naïve patients and prior insulin users from 28 countries). A_1chieve also evaluated the effect of insulin analogues on health-related quality of life (HRQoL) scores in these patients.[12]

The safety and efficacy of BIAsp 30 in the Philippine population is not well established with limited published data exploring its use in routine clinical practice. Therefore, the objective of the present analysis was to evaluate the safety, effectiveness, and HRQoL parameters of A_1chieve study participants in the Philippine cohort who were treated with BIAsp 30.

Materials and Methods

Overview of the A_1chieve study

The A_1chieve study was a 24-week, multinational, prospective, multi-center, non-randomized, observational study of people with T2DM who were started on basal insulin detemir (Levemir®, Novo Nordisk, Denmark), bolus insulin aspart (NovoRapid®, Novo Nordisk), and biphasic insulin aspart 30 - BIAsp 30 (NovoMix® 30, Novo Nordisk), alone or in combination with oral antidiabetic drugs (OADs), to evaluate their safety and effectiveness in routine clinical use.[12,13] The study was carried out in 28 countries across Asia, Africa, Latin America and Europe. In the Philippines, this study was carried out by specialists (endocrinologist, physicians with special interest in diabetes (internists and general practitioners) at clinics and hospitals. A total of 252 investigators from 120 investigative sites participated in this study. The list of investigators and sites is in Appendix 1.

Study eligibility

The study was conducted in accordance with the principles of Declaration of Helsinki. Ethics committee approval was obtained before study commencement, and all participants signed an informed consent prior to enrolment in the study. Inclusion and exclusion criteria were minimal in order to reflect real-life clinical practice. Patients with T2DM on any current and prior medications other than the insulin analogue being evaluated were included. Patients who had been started on the study insulin (Levemir®, NovoRapid® or NovoMix® 30) within four weeks prior to the study start were also included. Patients with hypersensitivity to the study drug or excipients, women who were pregnant, breast-feeding or with planned pregnancy within six months of the study were excluded. Participants were free to withdraw at will at any time during the study and the data collected were used for analysis until the part when consent was withdrawn.

Study objectives and assessment

The primary objective was to evaluate safety and effectiveness of the insulin analogues. The incidence of serious adverse drug reactions (SADRs), including major hypoglycemic events was recorded from baseline to final visit. Minor hypoglycemic episodes and nocturnal hypoglycemia were also assessed. The rate of hypoglyacemia was measured in events per patient years and was calculated as number of hypoglycemic events happened during four weeks prior to each visit/number of patients *52/4. Major hypoglycemic events were defined as events with severe central nervous system symptoms, consistent with hypoglycemia, requiring the assistance of another person and accompanied by plasma glucose <3.1 mmol/L or 56 mg/dL, with reversal of symptoms after food intake, intravenous glucose, or glucagon administration. Minor hypoglycemia was any event, with or without symptoms of hypoglycemia, with a plasma glucose reading below 3.1 mmol/L or 56 mg/dL that the participant was able to self-treat. Nocturnal hypoglycemia was defined as a symptomatic event consistent with hypoglycemia that occurred during sleep between bedtime after the evening insulin injection and before getting up in the morning. Effectiveness was determined from changes in HbA_{1c}, fasting plasma glucose (FPG), PPG and body weight between baseline, interim and final visits. Changes in systolic blood pressure (SBP) and lipid profile from baseline to final visit were also assessed. In addition, the effect of insulin analogue therapies on HRQoL of the participants was also evaluated.

The various insulin analogues prescribed by the physician during routine clinical practice were commercially available and funded according to local practice. Insulin analogues were administered by the patients themselves as per routine clinical practice. There were no defined study-related procedures and no medications or blood glucose monitoring equipment/

test strips were provided as part of study participation. The clinical and biochemical measurements made by the treating physician were those required in routine clinical practice. Data points were captured at baseline, 12 weeks and 24 weeks. The pre-study period was defined as the period four weeks prior to the baseline visit. Data was collected from the physicians' clinical notes, participants' recall and self-monitoring diary/meter at each visit and transferred to a standard case report form (CRF). The clinical and biochemical measurements made by the treating physician were those required in routine clinical practice, including weight, blood pressure, plasma glucose levels, HbA_{1c}, etc.

HRQoL was measured using the EQ-5D questionnaire and EQ visual analogue scale (EQ VAS) at baseline and 24 weeks. EQ VAS is a rating for an individual's current state, measured by a standard vertical 20 cm scale ranging from 0 (worst imaginable health) to 100 (best imaginable health). The EQ-5D questionnaire consisted of five dimensions (mobility, self-care, usual activities, pain/discomfort, anxiety/depression) and scored as 1, 2 or 3 depending on the level of severity. These different dimensions were converted to a single utility value, anchored by `1.00' representing "full health" and `0.00' representing the state "dead".

The participants were recruited between January 2009 and June 2010 and a total of 66,726 people were included in the study. In the Philippines, the patients were recruited from private, public and university clinics or hospitals referred by endocrinologists or internists or physicians treating diabetes mellitus. In this paper, we present the results of analysis from 1,252 Filipino participants treated with biphasic insulin aspart 30-BIAsp 30 (NovoMix 30, Novo Nordisk, Denmark).

Statistical methods

The sample size calculation for the entire global cohort was based on the number of patients (60,000) exposed for six months required to confirm a frequency of ≥15 events/100,000 patient-years of any one SADR, including major hypoglycemic events, at the 95% confidence level. No specific sample size calculation was conducted for each country.

Statistical analyses were performed for the entire cohort and for the insulin-naïve and prior insulin user cohorts. Descriptive statistics were used to summarize continuous variables and frequency tables (number and percentage) were used for discrete variables. All statistical analyses were two-sided, with 5.0% significance level, unless otherwise stated. For the change in hypoglycemia from baseline, the percentage of patients reporting at least one event was analyzed using McNemar's test. The change from baseline in HbA_{1c}, FPG, PPG, SBP, body weight, blood lipids and HRQoL was analyzed using a paired t-test using baseline and end-of-study values. Data analyses were performed by Novo Nordisk using SAS (Version 9.1.3).

Results

Statistical methods

A total of 1,252 patients were included in the subgroup analysis, with 978 patients (78%) being insulin -naïve and 274 patients (22%) on prior insulin therapy (mean age of total cohort was 55.5 ± 11.7 years). Females comprised 55.6% of the entire cohort. The duration of DM in the insulin-naïve group was 6.6 ± 5.1 years and 9.6 ± 6.6 years among prior insulin users. The baseline HbA_{1c} level was 10.0 ± 2.2% in insulin-naïve patients and 9.5 ± 2.3% in prior insulin users, indicating poor glycemic control (Table I). There were withdrawal of 188 patients in the entire cohort during the study period – two (0.2%) patients due to adverse drug reaction, 117 (9.3%) due to lost contact and 69 (5.5%) patients due to other reasons. As this study was non-interventional in nature, we did not obtain the educational status and religion of the participated patients.

Table I: **Baseline characteristics of the Philippine cohort, N=1,252**

	Entire cohort	Insulin-naive	Prior insulin users
N (%)	1252 (100)	978 (78.1)	274 (21.9)
Sex, M/F † (%)	555 (44.4) / 696 (55.6)	448 (45.9) / 529 (54.1)	107 (39.1) / 167 (60.9)
Age (yrs)	55.5 (11.7)	54.9 (11.2)	57.6 (13.0)
Duration of diabetes (yrs)	7.2 (5.6)	6.6 (5.1)	9.6 (6.6)
Body weight (kgs)	65.1 (14.7)	65.3 (15.1)	64.3 (13.1)
BMI § (kg/m2)	25.4 (5.3)	25.4 (5.4)	25.3 (4.9)
HbA_{1c} (%)	9.9 (2.2)	10.0 (2.2)	9.5 (2.3)

†- male/female; §- body mass index; Data expressed in Mean (Standard deviation) for all variables except N and Sex

Metformin was the most commonly prescribed OAD at pre-study (81.4%), at baseline (77.0%), and at 24 weeks (77.1%) of the study. Sulfonylureas were the second most commonly prescribed OAD (61.4%) at the pre-study period, dropping to 19.2% at baseline and further reduced to 17.6% at study end. DPP-4 inhibitor use increased from 10.9% (pre-study period) to 24.4% at study end. Thiazolidinediones were prescribed to 19.1% of the patients pre-study and was reduced to 13.4% at study end.

Safety and effectiveness

Glycemic control and insulin dose

Treatment with BIAsp 30 for 24 weeks led to statistically significant improvement in the magnitude of glycemic control ($p<0.001$). In the entire cohort, the mean reduction for HbA_{1c} was 2.7% and for FPG and PPG were 5.4mmol/L and 6.5mmol/L respectively.

In insulin naïve cohort, mean HbA_{1c} reduction was 2.8%; in prior insulin users, it was 2.4%. About 44% of the entire cohort achieved target HbA_{1c} level of <7%, after 24 weeks of BIAsp 30 therapy. Target HbA_{1c} <7% was achieved by 44.7% of insulin-naïve and 42.4% of prior insulin users following BIAsp 30 treatment (Table II). An analysis further into the treatment naïve patients (no insulin, no OAD given to patient) revealed a reduction of 3.6% in HbA_{1c} from baseline (10.7 ± 2.6). FPG and PPG also showed similar reductions for the entire cohort, the insulin-naïve patients and prior insulin users. HbA_{1c} was evaluated or available for only 630 of the 1,252 patients originally enrolled in the study.

Table II: **Efficacy of BIAsp 30 in controlling hyperglycemia**

		Entire cohort	Insulin naïve	Prior insulin
HbA_{1c} (%)	N	630	492	138
	Baseline	9.9 (2.2)	10.0 (2.2)	9.5 (2.3)
	24 weeks	7.2 (1.0)	7.2 (1.0)	7.2 (1.0)
	Change	-2.7 (2.1)*	-2.8 (2.0)*	-2.4 (2.1)*
Proportion (%) with HbA_{1c} <7%	Baseline	5.2	4.6	7.1
	24 weeks	44.2	44.7	42.4
Fasting plasma glucose (mmol/l)	N	774	596	178
	Baseline	12.2 (4.1)	12.6 (4.0)	10.9 (3.8)
	24 weeks	6.8 (1.9)	6.9 (2.0)	6.5 (1.6)
	Change	-5.4 (4.0)*	-5.7 (4.0)*	-4.4 (3.9)*
Post prandial plasma glucose (mmol/l)	N	116	83	33
	Baseline	14.3 (5.4)	14.4 (5.4)	14.1 (5.6)
	24 weeks	7.8 (1.7)	7.8 (1.7)	7.8 (1.7)
	Change,p	-6.5 (5.3)*	-6.6 (5.2)*	-6.3 (5.8)*

*p<0.001 compared to baseline; Data expressed in Mean (Standard deviation) for all variables unless mentioned otherwise

During the study, the dose of insulin in insulin-naïve patients was up-titrated from 32.9 ± 13.5 (0.52 U/Kg) at baseline to 40.5 ± 15.3 U/day (0.64 U/Kg) at 24 weeks. In prior insulin users, the pre-study insulin dose was 37.6 ± 18.1 U/day, adjusted to 40.7 ± 17.1 U/day at baseline and increased to 47.4 ± 19.6 U/day at study end.

Hypoglycemia

At baseline, overall 149 hypoglycemic events (1.55 events/person-year) were observed in 60 (4.8%) individuals in the entire cohort. Treatment with BIAsp 30 led to a reduction in the rate of overall hypoglycemia in the entire cohort, with 93 (1.14 events/person-year) events occurring in 41 (3.9%) patients. In prior insulin users, there was a remarkable reduction in overall hypoglycemic events from 4.93 events/person-year at baseline to 2.53 events/person year at 24 weeks. Although these reductions were clinically important, they did not reach statistical significance. There was a marginal non-statistically significant increase in the rate of hypoglycemia in insulin-naïve patients from 0.60 events/person year to 0.75 events/person-year. Twelve major hypoglycemic episodes (0.12 events/person-year) in five patients were reported from the entire cohort at baseline. The incidence of major hypoglycemia at baseline was higher in prior insulin users (0.52 events/person-year) compared to insulin-naïve patients (0.01 events/person-year). After 24 weeks of BIAsp 30 therapy, there was reduction in major hypoglycemic episodes with no report of such an event occurring in any participant, including the treatment-naïve patients. Minor hypoglycemic events in the entire cohort decreased from 1.42 events/person year to 1.14 events/person year. Nocturnal hypoglycemia was also reduced mainly in prior insulin users from 1.95 events/person-year to 0.79 events/person-year (Table III).

Body weight, blood lipids and blood pressure

Following treatment with BIAsp 30 for 24 weeks, there was no significant change in body weight in either insulin-naïve patients or prior-insulin users (Table II). In the entire cohort, total cholesterol level decreased significantly from 5.7 ± 1.5 mmol/L to 4.8 ± 0.9 mmol/L (p<0.001) at study end. There was a significant reduction in level of LDL cholesterol from baseline value of 3.7 ± 1.3 mmol/L to 2.9 ± 0.9 mmol/L (p< 0.001). Serum triglyceride level also decreased significantly from 2.0 ± 1.1 mmol/L at baseline to 1.6 ± 1.1 mmol/L (p< 0.001). Statistically significant increase in the HDL level was observed in prior insulin users, from 1.2 ± 0.3 mmol/L at baseline to 1.4 ± 0.4 mmol/L at 24 weeks (p=0.014). However, no statistically significant change in the HDL level was observed in the insulin-naïve patients. A reduction in SBP from 129.3 ± 19.3 mmHg at baseline to 123.0 ± 12.9 mmHg at 24 weeks (p<0.001) was observed in the entire cohort. The reductions in SBP following BIAsp 30 therapy were similar in insulin-naïve patients and prior insulin users.

Table III: **Hypoglycemia and effect on body weight**

(Percent with event/event per person-year)		Entire cohort	Insulin-naïve	Prior insulin
	N	(Baseline, 1252/24-weeks, 1064)	(Baseline, 978/24-weeks, 833)	(Baseline, 274/24-weeks, 231)
Overall Hypoglycemia ‡	Baseline	4.8 / 1.55	2.2 / 0.60	13.9 / 4.93
	24 weeks	3.9 / 1.14	2.4 / 0.75	9.1 / 2.53
	p-value	0.1385	1	0.0374
Minor Hypoglycemia ‡	Baseline	4.8 / 1.42	2.2 / 0.58	13.9 / 4.41
	24 weeks	3.9 / 1.14	2.4 / 0.75	9.1 / 2.53
	p-value	0.1385	1	0.0374
Major Hypoglycemia ‡	Baseline	0.4 / 0.12	0.1 / 0.01	1.5 / 0.52
	24 weeks	0.00 / 0.000	0.00 / 0.000	0.00 / 0.000
	p-value	0.0455	0.3173	0.0833
Nocturnal Hypoglycemia ‡	Baseline	2.2 / 0.56	0.6 / 0.17	7.7 / 1.95
	24 weeks	1.9 / 0.37	1.2 / 0.25	4.3/ 0.79
	p-value	0.3173	0.3173	0.0253
Body weight (kg)	N	918	717	201
	Baseline	64.5 (13.8)	64.9 (14.1)	63.0 (12.5)
	24 weeks	64.8 (13.3)	65.2 (13.5)	63.6 (12.5)
	Change	0.3 (4.5)*	0.2 (4.4)	0.6 (4.7)

‡- Patients experiencing at least one episode of hypoglycemia; * p<0.05 compared to baseline; Body weight is expressed in Mean (Standard deviation)

Health-related quality of life (HRQoL)

There was marked improvement in the quality of life measures of the participants following BIAsp 30 therapy. At baseline, the EQ VAS scores were similar for both insulin-naïve patients and prior insulin users. Significant improvement was noted following BIAsp 30 therapy with an increase of 13.8 points in insulin-naïve patients [68.4 at baseline (p<0.001)] and 6.3 points in prior insulin users (70.6 at baseline (p<0.001)). Across all the summary dimensions of EQ-5D (scale 0-1), significant improvements were observed. Prior insulin users improved by 0.110 points (0.764 at baseline (p<0.001) while there was an increase of 0.139 points [0.782 at baseline (p<0.001)] in insulin-naïve patients.

Discussion

The present subgroup analysis assessed the safety, effectiveness, and HRQoL parameters in A_1chieve study participants from the Philippines treated with BIAsp 30 for six months. There were significant reductions in HbA_{1c} by 2.8% in insulin-naïve patients and 2.4% in prior insulin users. These were consistent with the results observed in the global analysis of the A_1chieve study (2.2% in insulin-naïve patients; 1.8% in prior insulin users).[13] Although there were significant reductions in FPG and PPG in insulin-naïve and prior insulin users, the evaluation was based on a very small number of patients (FPG – 774 and PPG – 116) and therefore, should be carefully interpreted. The decrease in HbA_{1c} levels was similar to the results of the PRESENT and the ACTION studies. In the subpopulation analysis of the PRESENT study, patients with uncontrolled (HbA_{1c} ≥ 7.0%) on previous treatment (human insulin ± OAD or OAD only) reported significant reduction in HbA_{1c} level (2.2% in insulin-naïve patients and 1.60% in prior insulin users) after a six-month treatment with BIAsp 30.[6] Similarly, the patients in the ACTION study decreased HbA_{1c} level by 1.5% when BIAsp 30 was added to their existing regimen of metformin and pioglitazone.[14]

Bebakar et al, (2008), studied the effect of

adding BIAsp 30 to existing OADs vs. optimizing OADs in Western Pacific T2DM patients. Addition of BIAsp 30 once or twice daily for 26 weeks led to a 1.24% and 1.34% reduction in HbA_{1c} respectively, compared to a 0.67% reduction with OADs only.[15] Reduction in HbA_{1c} has been shown to correlate well with improved glycemic control and subsequent reductions in diabetic complications.[12,16] In an earlier multi-centric, multi-country survey in the secondary and tertiary health care setting, nearly 60% of Philippine participants found to have HbA_{1c} levels of >8%.[17] In the entire cohort of Filipino patients of the A_1chieve study, an overall reduction of 2.7% in HbA_{1c} led to a 44.2% achievement of target HbA_{1c} <7.0%. Importantly, 42.4% of prior insulin users reached target HbA_{1c} <7.0%, suggesting the benefit of switching to BIAsp 30 from other insulin therapies. The present analysis indicates that clinically significant glycemic control would be achievable with BIAsp 30 in Filipino patients within a six-month period, which would be at par with other diabetic populations across the world receiving this agent. There was a statistically marginal, but clinically irrelevant increase in body weight in the entire cohort.

Intensive insulin therapy while improving glycemic control is associated with increased risk of hypoglycemia, leading to significant morbidity and mortality, particularly in elderly and frail T2DM patients.[18] The UK Hypoglycemia Study Group which examined the frequency of hypoglycemia prospectively for nine to 12 months in T2DM patients who were being treated in secondary care reported the prevalence of severe hypoglycemia to be 25% in patients who were using insulin for more than five years.[18,19] In the present analysis of the Filipino cohort of A_1chieve study, no major hypoglycemic event was observed even among prior insulin users. In addition, the incidence of minor and nocturnal hypoglycemic events also decreased. However, while the reduction in hypoglycemic events were clinically significant, they did not achieve statistical significance. This is comparable with the global analysis of A_1chieve study data where the rate of major hypoglycemic episodes in prior insulin users decreased from 0.52 events/person-year at baseline to 0.02 events/person-year.[13] Our observations regarding safety of BIAsp 30 are consistent with that of other studies. A subgroup analysis of the PRESENT study reported a statistically significant reduction of daytime hypoglycemia from 3.9 events/person-year to 1.6 events/person-year following the switch from human basal insulin analogues to BIAsp 30. Similarly, nocturnal hypoglycemia also decreased from two events/person-year to 0.57 events/person-year.[7] Low rates of hypoglycemia with BIAsp 30 therapy have been reported in T2DM from the Western Pacific region by Bebakar et al, (2008) and Yoshioka et al, (2009) in Japanese patients.[20] However, this is in contrast with the 1-2-3 Study, an RCT carried out Western T2DM, which reported higher minor hypoglycemia rates of 15.4, 22.4 and 12.0 events/patient year with once-daily, twice-daily, and thrice-daily BIAsp 30 respectively.[21] The safety data of A_1chieve reassures the use of BIAsp 30 in clinical practice. Similar sub-group analysis on BIAsp 30 was published for Pakistani T2DM patients which showed similar effectiveness and safety profile of BIAsp 30.[22]

The EQ-5D instrument used in the study has been previously validated for use in diabetic patients.[23] The statistically significant improvement in EQ VAS score and EQ-5D scores at six months reflected the positive overall experience with BIAsp 30 therapy. The improvement in the EQ VAS score and EQ-5D score paralleled the improvement in glycemic control, and HRQoL scores in participants of the global A_1chieve cohort.[24] Our observations also echo the findings of the IMPROVE study which reported significantly higher satisfaction scores in patients with T2DM following the use of BIAsp30.[25]

Even though the large body of data generated by this study offers the opportunity to explore other important disease and therapy-related questions, there were limitations inherent in the study design. In particular, concomitant medication and dietary intake were not controlled, and the latter remains largely unmeasurable. The study was non-randomized and lacked a standardized treatment protocol and a control arm, with most safety and effectiveness parameters based on participant recall, diverse diaries or self-reported information. The circumstances under which participants came under the care of the investigators are not known, and these could have been a trigger for starting modern insulin therapy while at the same time improving other aspects of diabetes care. Additionally, the findings could have been influenced by a study effect as, although entry was retrospective, further data collection was prospective following informed consent. Further, due to the non-interventional nature of the study, there are a lot of missing values in effectiveness variables like HbA_{1c}, FPG and PPG.

Conclusions

The present subset analysis of the A_1chieve study showed that administration of BIAsp 30 among Filipino patients (both insulin-naïve and prior insulin users) improved glycemic control without concomitant risk of hypoglycemia or weight gain. BIAsp 30 is safe and efficacious for initiating and intensifying insulin therapy for T2DM patients in Philippines.

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APPENDIX 1
List of Investigators

Centre No.	Investigator
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0012	Rose Marie Dominguez Notre Dame De Chartres Hospital 25 General Luna Road, Baguio City Benguet, Philippines 2600
0013	Lani Flor 4 Mckinley Street, Brgy. 10 Laoag City, Ilocos Norte Philippines 2900
0015	Elizabeth Gonzales Bethany Hospital #2210 North Wing Annex Bldg. Real Street Tacloban City, Leyte Philippines 6500
0016	Werner Paul Irmscher Saint Louis University Hospital Assumption Road, Baguio City 2600 Benguet, Philippines 2600
0017	Raymond Oribio Notre Dame De Chartres Hospital Room 218- 25 General Luna Road, Baguio City, Benguet, Philippines 2600
0018	Liza Marie Paz-Tan Ground Floor Savellano Bldg. General Luna St., Laoag City Ilocos Norte, Philippines 2900
0019	Francis Pizarro Notre Dame De Chartres Hospital 25 General Luna Road, Baguio City Benguet, Philippines 2600
0020	Melanie Grace Valdez Vallejos Bldg., Laoag City Ilocos Norte, Philippines 2900
0021	Jubilia De Guzman Dagupan Doctors Villaflor Memorial Hospital Rm 2010 Medical Arts Tower Mayombo District, Dagupan City Pangasinan, Philippines 2400
0023	Ciezzel Monsanto Monsanto Clinic 2nd Floor EF Square Bldg., Urdaneta, Pangasinan, Philippines 2428
0024	Cristina Pascual Clinica Pascual Zamora Street, San Roque Tarlac City, Philippines 2300
0025	Lynfa Belocura Orthomed Clinic Rizal Street, Mangaldan Pangasinan, Philippines 2432
0026	Jovito Rivera Sabaro Alaminos Pangasinan Philippines 2404
0028	Toledo Ronaldo Señor Sto. Niño Hospital P. Burgos St., Camiling, Tarlac Philippines 2306
0029	Mary Rose Tongol Ramos General Hospital Rm 202 RAMDOCS 769 F. Hilado Street, Ligtasan Tarlac City, Philippines 2300
0030	Elmer Tumacder Specialist Group Hospital & Trauma Center Tapuac Distict, Dagupan City Philippines 2400
0031	Mary Ann Batongbacal Nazarenus Hospital Brgy. Ibayo, Marilao, Bulacan Philippines 3019
0037	Trinidad Dela Cruz Sta. Clara de Montefalco Medical Center Km. 20 North, Service Road, Meycauayan City, Bulacan Philippines 3020
0111	John Nazareno Nazareno Family Clinic Poblacion, Hagonoy, Bulacan Philippines 3002
0112	Gorgonia Salazar Salazar Clinic M de Leon cor R Mercado Streets, Poblacion, Sta Maria, Bulacan Philippines 3022
0113	Leila May Uaje Meycauayan Doctors Hospital LS Pavillon, Banga, Meycauayan, Bulacan, Philippines 3020
0114	Criselda Villareal Real CMV Clinic Parada, Sta. Maria, Bulacan Philippines 3020
0046	Ariel Ilaya Bataan Doctors Hospital Cuaderno St., Balanga City, Bataan Philippines 2100
0047	Maurice Sanosa St. Luke's Medical Center Rm 807 CHBC Bldg 279 E. Rodriguez Sr. Boulevard Quezon City, Philippines1112
0049	Agnes Soriano St. Agnes Polymedic #15 20th St. West Bajac-Bajac, Olongapo City, Philippines 2200
0051	Danilo Baldemor Center for Diabetes Care Sobrepeña Drive, San Jose City Nueva Ecija, Philippines 3121
0052	Edwin Borja 2nd Floor Centro Bldg., Tinio Street San Vicente, Gapan City Nueva Ecija, Philippines 3105
0054	Rasty Mejia Premiere Medical Center Maharlika Highway, Daan Sarile Cabanatuan City, Nueva Ecija Philippines 3100
0055	Reilo Ignacio CT Ignacio Pharmacy Sacred Heart of Jesus, San Jose Nueva Ecija, Philippines 3121
0057	Manuel Martinez Maharlika Highway, Matias District Talavera, Nueva Ecija Philippines 3114
0060	Reynaldo Yang Premiere Medical Center Maharlika Highway, Daan Sarile Cabanatuan City, Nueva Ecija Philippines 3100
0061	Mercedita Amansec Mother of Calcutta Medical Center Barangay Maimpis, San Fernando, Pampanga, Philippines 2000
0062	Carlo Rodrigo Carreon Angeles University Foundation Medical Center (AUFMC) Rm 207 Medical Tower Bldg. MacArthur Highway Barangay Salapungan Angeles City Philippines 2009
0063	Jocelyn Cordero Angeles University Foundation Medical Center (AUFMC) MacArthur Highway Barangay Salapungan Angeles City Philippines 2009
0064	Wilner Reinel De Guzman W. De Guzman Medical Clinic Angeles City, Pampanga Philippines 2009
0065	Fernando Guevarra Garcia Medical Center Rizal Street, Angeles City Pampanga, Philippines 2009
0066	John Kit Angeles University Foundation Medical Center (AUFMC) MacArthur Highway Barangay Salapungan Angeles City Philippines 2009
0067	Rommel Malonzo 1232 Miranda Street Angeles City, Pampanga Philippines 2009
0068	Nines Bautista Our Lady of Mt. Carmel Medical Center Km 78 McArthur Highway in Barangay Saguin, San Fernando Pampanga Philippines 2000
0070	Nessael Rozul Lagundi, Mexico Pampanga Philippines 2021
0071	Mary Anne Abrahan Manila Doctors Hospital 667 United Nations Avenue Ermita, Manila, Philippines 1000
0072	Alissa Laurel Calderon Ospital ng Maynila Roxas Blvd. cor Pres. Quirino Ave., Malate, Manila, Philippines 1004
0082	Leilani Asis Santo Tomas University Hospital Espana, Manila, Philippines 1008
0084	Juan Maria Co UERMMMC 64 Aurora Blvd., Brgy. Doña Imelda Quezon City, Philippines, 1113
0085	Elaine Cunanan University of Santo Tomas Hospital Room 106 España Boulevard, Manila Philippines 1008
0092	Catherine Carlos Roque Diagnostic Center M. Almeda St., Pateros, Manila Philippines 1620
0093	Emma Ruth Cuevas Pasig City Health Department Pasig City, Philippines 1600
0094	Nerissa de Guzman- Binoya DLS_STI Megaclinic 5/F SM Megamall Bldg. Julia Vargas Avenue Mandaluyong City, Philippines 1550
0096	Redentor Luz Fort Bonifacio General Hospital Fort Bonifacio, Makati City Philippines 1201
0098	Marjorie Ordinario Santolan Health Center Santolan, Pasig City Philippines 1610
0099	Evelyn Paraan Healthway Medical Clinic 5/F Feliza Bldg., 108 V.A Rufino St., Makati City, Metro Manila Philippines 1229
0100	Ralymar Tongson Fortune Care Clinic 606 Ground Floor, Dominga Bldg. Shaw Blvd., Pasig City Philippines 1552
0391	Llorilyn dela Cruz ADB Medical Center ADB Avenue, Ortigas Center Pasig City, Philippines 1605
0101	Jimmy Aragon Makati Medical Center Amorsolo St. Salcedo Village, Makati Philippines 1227
0106	May Ortiz- Sison Makati Medical Center Amorsolo St. Salcedo Village, Makati Philippines 1227
0107	Josephine Raboca Makati Medical Center Amorsolo St. Salcedo Village, Makati Philippines 1227
0109	Jade Villaluz PLDT MGO Clinic Legaspi corner dela Rosa Streets, Makati City, Philippines 1200
0078	Julie Marcelino 119 Quezon Avenue, Angono Rizal, Philippines 4000
0121	Jeimeen Agra Unciano Medical Center Circumferential Road, Antipolo Rizal, Philippines 1870
0122	Elizabeth Ann Catindig St. Luke's Medical Center Rm 337 Medical Arts Bldg. 279 E. Rodriguez Sr. Boulevard Quezon City, Philippines 1112
0123	Tomas Lazatin Jr. Marikina Valley Medical Center Sumulong Highway corner Aguinaldo St., Marikina City, Philippines 1800
0124	Magie Membrebe Clinica Membrebe 287 Palaugon Street, Rizal Philippines 1930
0125	Maita Nocom Marikina Valley Medical Center Sumulong Highway corner Aguinaldo St.,Marikina City, Philippines 1800
0126	Clara Rivera Delos Santos Medical Center Rm 253 DLS Medical Center 201 E. Rodriguez Sr. Blvd., Quezon City, Philippines 1112
0127	Rowena Rivera Queen Mary Help of Christians Hospital Room 108 QCHC Bldg. Brgy Calahan, Cardona, Rizal Philippines 1950
0128	Ricardo Salvador 397 J.P Rizal Street, Sto. Niño Marikina City, Philippines 1800
0129	Vincent Santos Marikina Hospitals Bayan- Bayan Avenue, Marikina Philippines 1800
0130	Marife Guerrero Maginhawa Medical Clinic 173-A Maginhawa Street Sikatuna Village, Quezon City Philippines 1101
0135	Raquel Maliwat Maxicare Clinic- The Medical City MGR04 Ground Floor, Medical Arts Tower, Inc., The Medical City, Ortigas, Pasig City, Philippines 1605
0138	Raquel Maliwat Maxicare Clinic- The Medical City MGR04 Ground Floor, Medical Arts Tower, Inc., The Medical City, Ortigas, Pasig City, Philippines 1605
0141	Cristina Acuesta Tondo Medical Center North Bay Boulevard, Balut, Tondo, Manila, Philippines 1013
0142	Joy Agpaoa- Ortega Gat Andres Bonifacio Memorial Medical Center Delpan St., Tondo Manila Philippines 1013
0143	Joanne Marie Bretana- Padilla Ospital ng Tondo Jose Abad Santos Avenue., Tondo Manila, Philippines 1013
0147	Robert Michael Gan Metropolitan Medical Center 1357 G Masangkay St, Tondo Manila Philippines 1013
0148	Mylene Kabigting Gat Andres Bonifacio Memorial Medical Center Delpan St., Tondo Manila Philippines 1013
0149	Marcelo Lim Mary Johnston Hospital 1221 Juan Nolasco St., Tondo, Manila Philippines 1012
0150	Maria Arlyn Mangaser Justice Jose Abad Santos Mother and Child Hospital Numancia St., Binondo, Manila Philippines 1012
0118	Catherine Torres 1758 Rm 203 Malabon Street Cor. Rizal Avenue, Sta. Cruz, Manila Philippines 1014
0119	Tommy Ty- Wiling Metropolitan Medical Center 1357 G Masangkay St. Tondo, Manila Philippines 1013
0151	Ma. Cecilia Gonzales Paranaque Doctors Hospital 175 Doña Soledad Avenue Better Living Subdivision,

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0152 Caridad Hipolito
Olivarez General Hospital
Dr. A. Santos Ave. (Sucat) Paranaque City, Metro Manila, Philippines 1700

0154 Ma. Luisa Licaros
Manila Adventist Medical Center
1975 Donada Street
Pasay City, Metro Manila
Philippines 1300

0155 Rachel Milagros Lontoc
Manila Naval Hospital
Fort Bonifacio, Taguig City,
Taguig City 1201

0157 Maria Josephine Valerio
Air Force General Hospital
Col. Jesus Villamor Air Base Pasay Metro Manila 1350

0158 Arlene Yason
Paranaque Doctors Hospital
175 Doña Soledad Avenue
Better Living Subdivision,
Don Bosco, Paranaque City
Philippines 1711

0161 Ernesto Ang
Cardinal Santos Medical Center
Wilson Street, Greenhills, San Juan, Metro Manila, Philippines 1503

0162 Eduardo Thomas Aquino
Victor R. Potenciano Medical Center
No.163 EDSA (Southbound Side) Mandaluyong City, Philippines 1556

0164 Alfredo Gatmaitan
Victor R. Potenciano Medical Center
No.163 EDSA (Southbound Side) Mandaluyong City, Philippines 1556

0165 Ruby Go
Cardinal Santos Medical Center
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0166 Griselda Ishiwata
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Boni Avenue cor. Sto. Rosario Street Barangay Plainview,
Mandaluyong City, Philippines 1550

0167 Ramon Mariano
Victor R. Potenciano Medical Center
No.163 EDSA (Southbound Side) Mandaluyong City, Philippines 1556

0168 Ma. Concepcion Marcelo
Cardinal Santos Medical Center
Wilson Street, Greenhills, San Juan, Metro Manila, Philippines 1503

0169 Ma. Isabel Savillo
Our Lady of Lourdes Hospital
46 P. Sanchez St., Sta. Mesa Manila, Philippines, Philippines 1016

0170 Rosa Allyn Sy
Cardinal Santos Medical Center
Wilson Street, Greenhills, San Juan, Metro Manila, Philippines 1503

0171 Maria Grace Araneta
Ramiro Medical Center
Tagbilaran City, Bohol
Philippines 6300

0172 Marbert Cardino
Tagbilaran Community Hospital
Miguel Parras street, Tagbilaran City, Bohol, Philippines 6300

0173 Kevin Cimafranca
Perpetual Soccour Hospital
Gorordo Avenue, Lahug, Cebu City Philippines 6000

0174 Lalaine delos Santos
Ramiro Medical Center
Tagbilaran City, Bohol
Philippines 6300

0175 Renan Dungog
Perpetual Soccour Hospital
Gorordo Avenue, Lahug, Cebu City Philippines 6000

0177 Liliosa Patindol
Ramiro Medical Center
Tagbilaran City, Bohol
Philippines 6300

0178 Enriqueta Sepe
Ramiro Medical Center
Tagbilaran City, Bohol
Philippines 6300

0179 Marsha Tolentino
Perpetual Soccour Hospital
Gorordo Avenue, Lahug, Cebu City Philippines 6000

0180 Marc Udarbe
Siliman University Medical Center
Aldecoa Road, Dumaguete City, Philippines 6200

0181 Elma Baculao
Visayas Community Medical Center
No. 85 Osmeña Boulevard, Cebu City
Philippines 6000

0182 Imelda Bilocura
Chong Hua Hospital
Llorente St., Capitol Site Cebu City Philippines 6000

0183 Consolacion Cutillar
Cebu Velez General Hospital
corner of F. Ramos and V. Ranudo Street, Cebu City
Philippines 6000

0184 Deanna Paz Del Mar
Chong Hua Hospital
Llorente St., Capitol Site Cebu City Philippines 6000

0185 Marian Denopol
Visayas Community Medical Center
No. 85 Osmeña Boulevard, Cebu City Philippines 6000

0186 Evelyn Gamallo
Visayas Community Medical Center
No. 85 Osmeña Boulevard, Cebu City Philippines 6000

0187 Athena Mejia
Chong Hua Hospital
Llorente St., Capitol Site Cebu City Philippines 6000

0188 Chela Marie Romero
South General Hospital
Tuyan, Naga Cebu
Philippines 6037

0189 Jesusa Santos
Kainos Medical Clinic
10th Floor Metrobank Plaza, Fuente Osmeña, Cebu City
Philippines 6000

0190 Gerry Tan
Cebu Doctors Hospital
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0191 Carol Baligod
S.R Diagnostic Clinic
M.H. Del Pilar Street
Tacloban City, Leyte
Philippines 6500

0192 Edwin Cañete
Cañete Medical Clinic
Burgos Street
Ormoc City, Leyte, Philippines 6541

0193 Olga Chavez
Divine Word Hospital
Avenida Veteranos, Tacloban City Leyte, Philippines 6500

0194 Nelson Chu
Chu Medical Clinic
Lopez Jaena Street
Ormoc City, Leyte, Philippines 6541

0195 Conchito dela Cruz
Divine Word Hospital
Avenida Veteranos, Tacloban City Leyte, Philippines 6500

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0203 Bernardo Carpio
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Quezon City, Metro Manila
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0204 Prinsesa Concepcion
Neo Medica Clinic
Congressional Avenue
Quezon City, Philippines 1100

0210 Balthazar Villaraza
Veterans Memorial Medical Center
North Ave., Diliman
Quezon City, Metro Manila
Philippines 1100

0213 Dionisio Cabawatan
St. Luke's Medical Center
201 E. Rodriguez Sr. Avenue
Quezon City, Philippines 1102

0214 Richard Elwyn Fernando
St. Luke's Medical Center
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0215 Gabriel Jasul
St. Luke's Medical Center
201 E. Rodriguez Sr. Avenue
Quezon City, Philippines 1102

0216 Cherrie Lumapas
St. Luke's Medical Center
201 E. Rodriguez Sr. Avenue
Quezon City, Philippines 1102

0219 Jose Yason
Delos Santos Medical Center
No. 201 E. Rodriguez Sr. Blvd., Quezon City, Metro Manila
Philippines 1102

0222 Arlene Francisco
Twin Hearts Clinic
Fairview Quezon City

0223 Janette Liban
FEU- NRMF Medical Center
Regalado Ave. cor Dahlia, West Fairview Q.C., Philippines 1118

0224 Deana Licop
Christian Medical Clinic
7 BF Road, Commonwealth
Quezon City, Philippines 1121

0225 Rowena Linga
FEU- NRMF Medical Center
Regalado Ave. cor Dahlia, West Fairview Q.C., Philippines 1118

0226 John Malundo
Well of Life Medical Specialist Center
89 Fairview Ave., Cor. Winston St.,
Fairview Subd., Q.C.
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0227 Don Maningas
FEU- NRMF Medical Center
Regalado Ave. cor Dahlia, West Fairview Q.C., Philippines 1118

0230 Arlette Samaniego
FEU- NRMF Medical Center
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0393 Arnel Santos
San Lorenzo General Hospital
Quirino Highway, Brgy. Pasong Putik, Lagro, Novaliches, Quezon City
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0395 Estepa Victorio
Medical Specialist Clinic
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0231 Cynthia Fabregas
Starmed Clinic
Acre Bldg, Malakas Street
Diliman, Quezon City
Philippines 1101

0233 Vivian Tagle
SSS Medical Department
East Avenue Diliman, Quezon City
Philippines 1101

0235 Maybelle Yanuaria
V. Luna Hospital
V. Luna Rd., Quezon City
Philippines 1100

0243 Gerardo Nallas
Citidoctors Polyclinic
742 M. Naval St., , Navotas, Metro Manila, Philippines 1485

0245 Alan Ong
Diabetes Clinic
A.Bonifacio Street, Quezon City
Philippines 1100

0246 Vicente Ortiz
Perlas Polyclinic Specialist's Center
171-173 cor F. Roxas St., 4th Ave., Caloocan City, Philippines 1405

0247 Antonio David
Medcare Specialists Clinic
120 McArthur Highway
Valenzuela City, Philippines 1440

0248 Edwin Fortunc
Fatima Medical Center
120 Mc. Arthur H-way, Valenzuela, Metro Manila, Philippines 1440

0249 Virginia Tolentino
Clinica Nazal
Sangandaan Caloocan City
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0251 Yvette Amante
Asian Hospital and Medical Center
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0252 Carmen Babaran
Healthway Medical Clinic
Filinvest Corporate City Alabang, Muntinlupa, Philippines 1780

0253 Arlene Crisaldo
Ospital ng Muntinlupa
Civic Drive, Filinvest, Alabang, Muntinlupa City, Metro Manila
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0256 Ignacia Fajardo
Las Piñas District Hospital
Real St., Pulang Lupa, Las Piñas City , Metro Manila, Philippines 1742

0258 Aurora Macaballug
Perpetual Help Hospital
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0260 Gabriel Tan
Las Piñas City Medical Center
1314 Marcos Alvarez Ave., Talon V, Las Piñas City, Metro Manila
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0261 Oliver Bautista
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0262 Teresita Andal
St. Therese of the Child Jesus Clinic
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0263 Eden Caringal
Most Holy Trinity Clinic
Rizal Avenue, Batangas City
Philippines 4200

0264 Christia Goco
Maria Estrella Hospital
Tawiran, Calapan City, Oriental Mindoro, Philippines 5200

0265 Gloria Malaluan- Craig
Palma- Malaluan Hospital
J. Magtibay St., Rosario Batangas Philippines 4225

0266 Simon Malijan
Daniel Mercado Memorial Medical Center
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Tanauan City, Batangas
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0267 Carolyn Montano
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0268 Francisca Paglinawan
Holy Queen Medical Clinic
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0269 Florence Santos
Mandigma Bldg., Apacible St.
Tanauan, Batangas, Philippines 4232

0270 Apolonia Livia Villarez
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0271 Amor Awayan
St. Gerard Polyclinic and Diagnostic Laboratory
Gomburza Street, San Pablo City
Laguna, Philippines 4000

0272 Angelito Belen
Belcast Clinic
53 Barangay, San Pablo City
Laguna, Philippines 4000

0273 Josephine Briones
MMG Medical Plaza
Klinika Briones, 4th Unit
Aliviso Bldg., Valderas St.
Sariaya, Quezon, Philippines 4322

0274 Jocelyn Chua
Mother of Grace Polyclinic
Rizal St., Candelaria, Quezon
Philippines 4323

0275 Marilyn Coronacion
Quezon Medical Center
Ciudad Maharlika, Iyam, Lucena City Philippines 4301

0276 Prospero Esclanda
P. Zulueta Street, San Pablo City, Laguna, Philippines 4000

0277 Maria Lourdes Gonzales
Lucena United Doctors Hospital
178 Merchan St., Lucena City

Philippines 4301

0278 Jean Frances Noblejas
Immaculate Concepcion Hospital
P. Alcantara Street, San Pablo City
Laguna, Philippines 4000

0279 Roman Oabel
Lucena MMG General Hospital
Maharlika Highway, Ibabang Dupay, Lucena City, Quezon
Philippines 4301

0280 Romane Jesus Pilar
Emil and Joana Hospital
Quezon Street, Atimonan Quezon
Philippines 4331

0397 Roy Roxas
Lucena MMG General Hospital
Maharlika Highway, Ibabang Dupay
Lucena City, Quezon
Philippines 4301

0398 Cynthia Sanchez
San Pablo Community Medical Center
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Philippines 4000

0399 Nenita Tan
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Quezon, Philippines 4301

0400 Marisonia Tan
San Pablo Doctors Hospital
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Philippines 4000

0281 Amor Antonio
Amor Antonio Clinic
Pacita, San Pedro, Laguna
Philippines 4023

0282 Lynn Bilar
St. James Hospital
Manikita Pebio Dita Sta. Rosa, Laguna
Philippines 4026

0283 Antonio Chua
Emmanuel Clinic
Brgy. Pagsawitan, Sta. Cruz, Laguna
Philippines 4009

0284 Victorino delos Reyes
Evangelista Medical Specialty Hospital
J. P. Rizal St., cor. Macaria Ave., Pacita 1, San Pedro, Laguna
Philippines 4023

0285 Ronald Hingzon
Perpetual Help Hospital
Jubilation New Binan, Mamplasan, Binan, Laguna, Philippines 4024

0286 Elaine Gayle Lopez
Biñan Doctors Hospital
Segunda Village Platero
Laguna, Philippines 4024

0287 Marie Gertrude Santos
Biñan Doctors Hospital
Segunda Village Platero
Laguna, Philippines 4024

0288 Venus Seron
Green Pasture Diabetes Center
Ph 4 Block 5 Lot 31 Gold ave., Golden City Subd., Brgy. Dila, Sta. Rosa, Laguna, Philippines 4026

0289 Cynthia Talla
Calamba Medical Center
Crossing, Calamba City Calamba Laguna, Philippines 4029

0290 Ma. Victoria Valdez
San Pedro Doctors Hospital
Old National Highway, San Pedro Laguna, Philippines 4023

0402 Vicente Escalante
Calamba Medical Center
Crossing, Calamba City Calamba Laguna, Philippines 4029

0291 Arthur Alvarez
Alvarez Medical Clinic
V. Demetriou St., Tabaco, Albay
Philippines 4511

0293 Reynaldo Caresosa
Naga City Hospital
Naga City, Camarines Sur
Philippines 4400

0294 Rosemen Fernando
Esteves Memorial Hospital
Legaspi City, Albay
Philippines 4500

0296 Christopher Gianan
Daddy's Little Angel
Door #5 Cocson Bldg, Old Bldg.
Legaspi City, Albay
Philippines 4500

0297 Justin Novela
Rinconada Diagnostic Center
Camarines Sur, Bonacua Bldg.,
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Iriga City, Philippines 4431

0298 Paul Luis Palencia
Our Lady of Lourdes Hospital
Daet, Camarines Norte
Philippines 4600

0299 Floranie Paredes
Paredes Medical Clinic
Montana Arcade, Panganiban Drive
Naga City, Camarines Sur
Philippines 4400

0301 Nasanciano Albaran
St. Dominic Medical Center
Talaba, Bacoor, Cavite
Philippines 4102

0302 Suzette Ambagan
De La Salle University Medical Center
Congressional Avenue Dasmariñas
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0303 Gima Aniceto
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0304 Marlisa Calma
Rural Health Center
Divine Grace, Bacao, Cavite
Philippines 4100

0305 Charisse Medina
Asiamedic Diagnostic & Specialty Center
E. Aguinaldo Highway, Anabu II, Imus Cavite, Philippines 4103

0306 Jose Carlos Miranda
Our Lady of Pillar Medical Center
Tansui Ave. Bayan Luma, Imus, Cavite, Philippines 4103

0307 Ruth Punzalan
Municipal Health Center
A. Soriano Highway, Tanza, Cavite
Philippines 4108

0308 Josefino Rebancos
De La Salle University Medical Center
Congressional Avenue Dasmariñas
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0309 Michelle Santiago
De La Salle University Medical Center
Congressional Avenue Dasmariñas
Cavite, Philippines 4114

0310 Maria Esperanza Uy
De La Salle University Medical Center
Congressional Avenue Dasmariñas
Cavite, Philippines 4114

0317 Emilia Patriana
Cagayan De Oro Polymedic Hospital
Don Apolinar Velez St.,
Cagayan de Oro City,Philippines 9000

0319 Erickson San Juan
St. Ignatius Medical Clinic
Pelaez Sports Center A. Velez St., Cagayan de Oro City,Philippines 9000

0320 Arthur Tan
Cagayan De Oro Polymedic Hospital
Don Apolinar Velez St.,
Cagayan de Oro City,Philippines 9000

0321 Jeanette Abucayon
FK Polyclinic
Iligan City, Lanao del Norte
Philippines 9200

0322 Lito Buensalida
Buensalida Clinic
Malvar St. Dipolog City, Zamboanga Del Norte, Philippines 7100

0323 Agnes Fernandez
F. Susana Polyclinic
Ozamis City, Misamis Occidental
Philippines 7200

0324 Faith Go
Go Clinic
Oroquieta City, Misamis Occidental
Philippines 7207

0325 Babelonia Kangleon
Dipolog Medical Center
Sta. Filomena, Dipolog City Philippines 7100

0326 Jo Ann Lao- Go
Ozamis Laboratory and Clinic
104 Metro Lab Building, Burgos St. Ozamis City, Misamis Occidental
Philippines 7200

0327 Asunciano Arce Lomanta Jr.
Lomanta Diabetes Clinic
Ozamis City, Misamis Occidental
Philippines 7200

0328 Agnes Jane Santilleces
Our Lady of Carmel Family Medical Clinic
Herrera Street, Dipolog City
Philippines 7100

0331 Angel Araneta
Riverside Medical Center
B.S. Aquino Drive Bacolod City Philippines 6100

0332 Marian Joyce Co
Accucheck
21st North Drive, Bacolod City
Philippines 6100

0340 Roberto Salvador
Riverside Medical Center
B.S. Aquino Drive Bacolod City Philippines 6100

0345 Judy Anne Gatmin- Yuzon
Davao Medical School Foundation Hospital
Suite 201-202 2nd Flr. Medical Arts Bldg., San Pedro Hospital
Davao City, Philippines 8000

0347 Veronica Racho
Davao Doctor Medical Clinic
8th Floor Davao Doctor Medical Clinic Tower, Malvar, Davao City
Philippines 8000

0348 Yvette Tan
CHDC Hospital
Rm 109 CHDC Hospital
Anda Riverside, Davao City
Philippines 8000

0349 Hector Quiambao
San Pedro College Doctors Clinic
Rm 18 SPCDC Davao City
Philippines 8000

0350 Francis Lee Ho
Brokenshire Hospital
Madapo Hills, Davao City
Philippines 8000

0351 Jaime Acorin
ZAEC Hospital
291 Canelar St., Zamboanga City
Philippines 7000

0352 Cynthia Pollisco
Western Mindanao Medical Center
Rm 122 Veterans Avenue Extension, Zamboanga City, Philippines 7000

0353 Jamasali Usman
Ciudad Medical Hospital
Nuñez Extension, Zamboanga City, Philippines 7000

0354 Troy Abdurhaman
ZAEC Hospital
291 Canelar St., Zamboanga City
Philippines 7000

0355 Fatma Tiu
Zamboanga Doctors Hospital
Veterans Avenue, Zamboanga City
Philippines 7000

0356 Roger Fernandez
Diabetes Clinic, Veterans Avenue
Zamboanga City, Philippines 7000

0357 Edgar Bisquera
Ciudad Medical Hospital
Nuñez Extension, Zamboanga City, Philippines 7000

0361 Ma. Ester Legaspi
St. Jude's Hospital
F. Quimpo Street, Kalibo, Aklan
Philippines 5600

0362 Faye Maria Blancaver
St. Anthony College Hospital
San Roque Ext., Roxas City
Capiz, Philippines 5800

0363 Diana Marie Cacho
St. Paul's Hospital
Rm 212 PLCC St., Iloilo City
Philippines 5000

0365 Lenny Malaki
St. Paul's Hospital
Spice Bldg., Gen. Luna Street
Iloilo City, Philippines 5000

0367 Ma. Dovie Ygpuara
Rm 212 Healthlink, Mabini Street
Iloilo City, Philippines 5000

0368 Gregory Arderia
Panay Healthcare
Estancia, Kalibo, Aklan
Philippines 5600

0369 Louella Araza
Plaza Libertad Medical Specialists
Yulo Bldg., JM Basa St., Iloilo City
Philippines 5000

0372 Ma. Theresa Pascual
Cerezo Clinic
Alunan Avenue, Koronadal City
Philippines 9508

0373 Glecy Forman
Forman Clinic
National Highway, Isulan
Sultan Kudarat, Philippines 9805

0374 Flora Mae Jacobo
Jacobo Clinic
Midsayap, Cotabato City
Philippines 9410

0376 Jolyle Mazo
AJM Bldg., Magsaysay Avenue
General Santos City, Cotabato
Philippines 9500

0377 Vinalyn Nolasco
Demontaño Multi-Specialty Clinics
Demontaño Bldg., Santiago Blvd.
General Santos City, Cotabato
Philippines 9500

0378 Belen Pascasio
Pascasio Clinic
Tacurong, Sultan Kudarat
Philippines 9800

0379 Ruth Peñaflorida
Demontaño Multi-Specialty Clinics
Demontaño Bldg., Santiago Blvd.
General Santos City, Cotabato
Philippines 9500

0380 Lucy Ann Yap
Yap's Clinic
Roxas East Avenue
General Santos City, Cotabato
Philippines 9500

0381 Lourdes Aportadera
Aportadera Bldg., Commission Civil St. Jaro, Iloilo City
Philippines 5000

0385 Fe Hilado
Iloilo Doctors Hospital
311 MAB Condominium Iloilo City
Philippines 5000

0386 Aretha Ann Livag
J&B Clinics
Quezon St., Iloilo City
Philippines 5000

0387 Suzette Labrador
Healthlink Clinic
Rm 221 Healthlink Bldg., Mabini St.
Iloilo City, Philippines 5000

0388 Christina Erum
Iloilo Doctors Hospital
2nd floor, Condo Wing, Molo
Iloilo City, Philippines 5000

0390 Rollin Tabuena
Jalandoni Street, Iloilo City
Philippines 5000