EE332.A BUDGET IMPACT MODEL FOR TERLIPRESSIN IN TREATING BLEEDING OESOPHAGEAL VARICES PATIENTS IN THE PHILIPPINES

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Objective

Treatment of bleeding oesophageal varices (BOV) places a high burden on healthcare resources such as hospitalizations. It was estimated that there were approximately 20,000 new cases of BOV in the Philippines every year. Vasoactive agents such as terlipressin, somatostatin, and octreotide are widely used for the treatment of BOV. The objective of our analysis was to quantify the budget impact of using terlipressin for treating BOV patients from the Philippines health system perspective.

Method

- **Evaluation type:** budget impact model **(Figure 1)**
- **Time horizon:** five years
- **Perspective:** a public payer's perspective in the Philippines
- **Intervention:** terlipressin
- **Comparators:** somatostatin and octreotide
- **Market share:** current market share without terlipressin and future market share with terlipressin **(Table 1)**
- **Population inputs:** General population inputs included the total population in the Philippines, population growth, number of cirrhosis cases, a prevalence rate of Oesophageal Varices (OV), and proportion of BOV from OV. **(Table 2)**
- **Economic and health resource use (HRU) inputs:** the unit cost of health services (drugs, physician visits, hospitalizations, number of transjugular intrahepatic portosystemic shunt (TIPS) and salvage surgery, Number of Prophylactic Sclerotherapy/Band Ligation) and corresponding utilization were informed by local cost databases and clinical experts in the Philippines **(Table 3)**
- **Model outcomes:** budget impact in total costs in the Philippines peso (₱)

Table 1. Current and Future Market Share [5]

	Terlipressin	Somatostatin	Octreotide
Current	0%	77.5%	22.5%
Y1	5%	73.6%	21.4%
Y2	5.5%	73.2%	21.3%
Y3	6.0%	72.9%	21.2%
Y4	6.5%	72.5%	21.0%
Y5	7.0%	72.1%	20.9%

Table 2. Population Inputs

Population size	110,000,000 [1]
Annual population growth	1.4% [2]
Number of cirrhosis cases	337,260 [3]
Proportion of OV	50% [4]
Proportion of bleeding	12% [4]

Figure 1. Model Overview

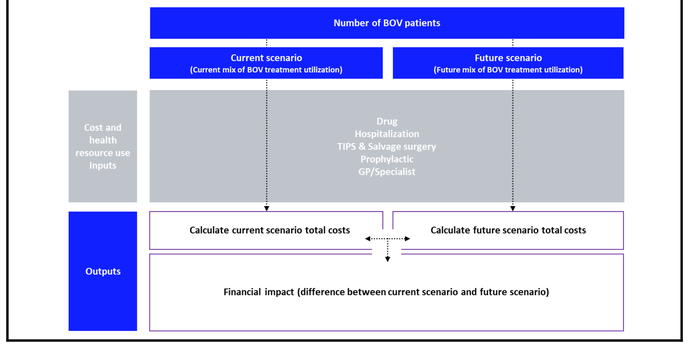

Table 3. Economic and HRU Inputs

Costs	Unit Cost	Annual Units
Hospitalization during the bleeding [6]		
Terlipressin	₱ 1,000	2 days
Others	₱ 1,000	3 days
Rescue Surgery [6]		
Salvage surgery	₱ 200,000	0 procedure
Secondary prophylaxis [6]		
Prophylactic Sclerotherapy/ Band Ligation	₱ 7,000	1 procedure
Physician visits	₱ 500	4 visits
Drug costs (per vial) [7]		
Terlipressin	₱ 1,840	10 vials
Octreotide	₱ 4,491	5 vials
Somatostatin	₱ 5,109	4 vials

Table 4. Patient Number by Treatment in the Current Scenario

	Terlipressin	Somatostatin	Octreotide	Total
Y1	0	15,683	4,553	**20,236**
Y2	0	15,902	4,617	**20,519**
Y3	0	16,125	4,681	**20,806**
Y4	0	16,351	4,747	**21,097**
Y5	0	16,579	4,813	**21,393**

Table 5. Patient Number by Treatment in the Future Scenario

	Terlipressin	Somatostatin	Octreotide	Total
Y1	1,012	14,898	4,325	**20,236**
Y2	1,129	15,028	4,363	**20,519**
Y3	1,248	15,157	4,401	**20,806**
Y4	1,371	15,288	4,438	**21,097**
Y5	1,497	15,419	4,476	**21,393**

Results

- The model estimated the budget impact of adopting terlipressin in the Philippines with 110 million citizens.
  - There were 0 patients treated by terlipressin in the current scenario. **(Table 4)**
  - The number of patients treated with terlipressin increased from 1,012 in Year 1 to 1,497 in Year 5 under the future Scenario. **(Table 5)**
- Terlipressin generated cost savings in the Philippines. With a population of 110 million in the Philippines, increasing the utilization of terlipressin in patients with BOV to 7% in Year 5 resulted in cost savings of between ₱3.06 million (approximately 61,271 USD) and ₱4.53 million (approximately 90,706 USD) from Year 1 to Year 5, with total 5-year savings on almost 19 million. **(Table 6)**
- Cost savings were driven mainly by the savings in drug costs and hospitalizations.

Table 6. Budget Impact Results

	Y1	Y2	Y3	Y4	Y5
Drug costs	-₱2,048,757	-₱2,285,184	-₱2,527,829	-₱2,776,820	-₱3,032,287
Hospitalization costs	-₱1,011,780	-₱1,128,539	-₱1,248,370	-₱1,371,334	-₱1,497,497
Total budget impact	-₱3,060,537	-₱3,413,723	-₱3,776,198	-₱4,148,154	-₱4,529,784

Conclusion

Using terlipressin in treating BOV patients in the Philippines had a minimal budget impact within five years in the Philippines. It could be an affordable treatment option for BOV patients.

References

1. Philippines Statistics Authority;
2. The World Bank;
3. World Gastroenterology Organization;
4. MD Guidelines
5. Internal source;
6. Communication with local clinical experts in the Philippines
7. Drug Price Index — Department of Health

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