

Safety and Cost analysis of Image-guided Functional Endoscopic Sinus Surgery in China

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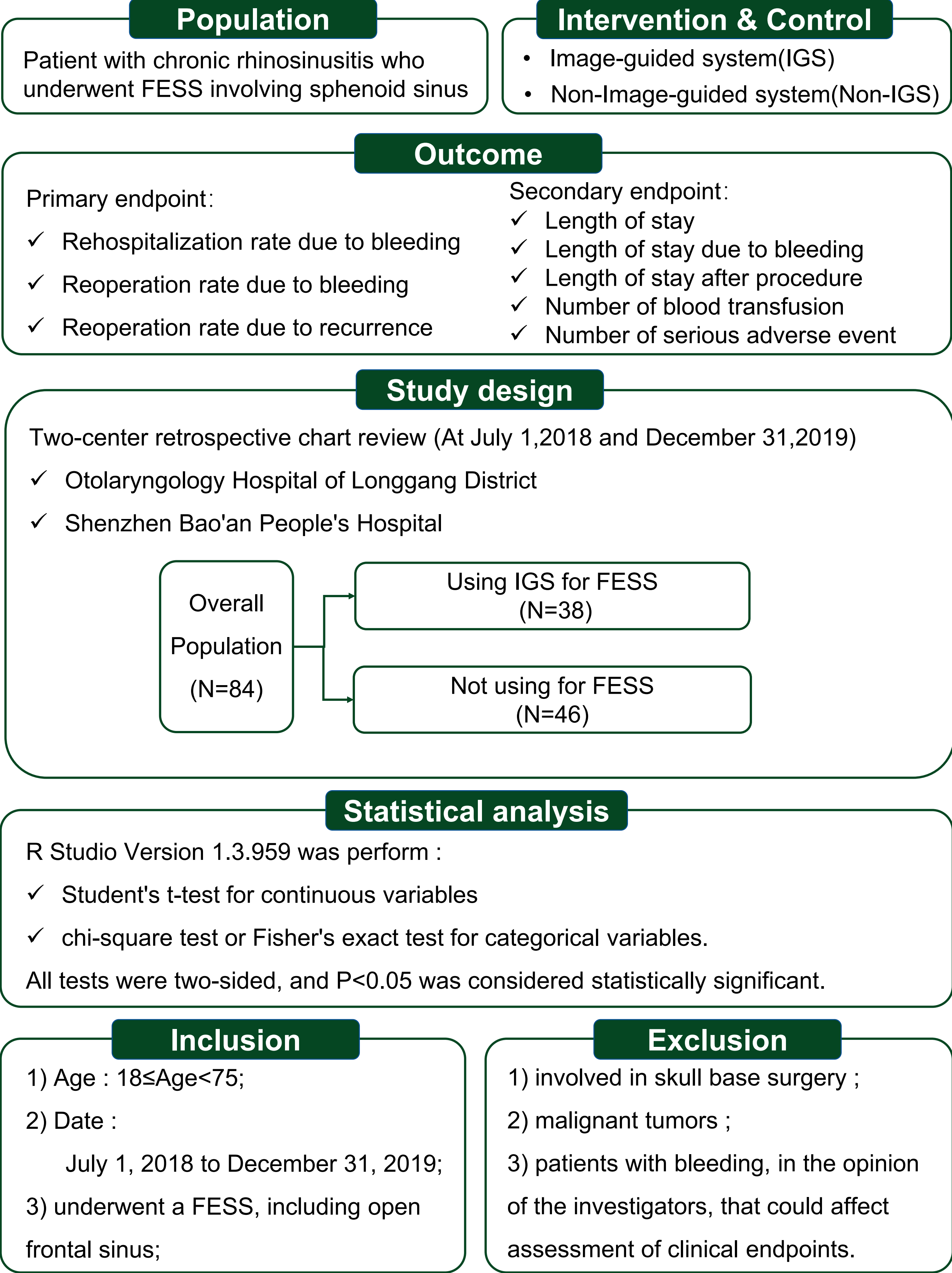


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Objectives

Image-guided system (IGS) is a technique used to assist the physician during functional endoscopic sinus surgery (FESS), making FESS more accurate and reducing the complications associated with the procedure. The position and anatomical feature of sphenoid sinus make FESS surgery requiring sphenoid resection a challenge. The study seeks to compare the complications and cost of FESS with and without IGS among patients requiring sphenoid resection.

Methods



Result

In the non-IGS group, there were two cases of rehospitalization due to bleeding; all two patients underwent hemostasis surgery with an incidence of 3.70% (P=0.215). The total hospitalization cost was ¥ 18,764.23 CNY in the IGS group and ¥ 19,624.92 CNY in the non-IGS group per patient, with no statistical difference between the two groups (P=0.076) in Figure 1.

In the case of no difference in the length of stay, although the procedure-related medical costs of IGS group were increased by ¥ 833.11 CNY compared with the non-IGS group, this was more than offset by drug costs and antibacterial drug costs in Figure 2,3.

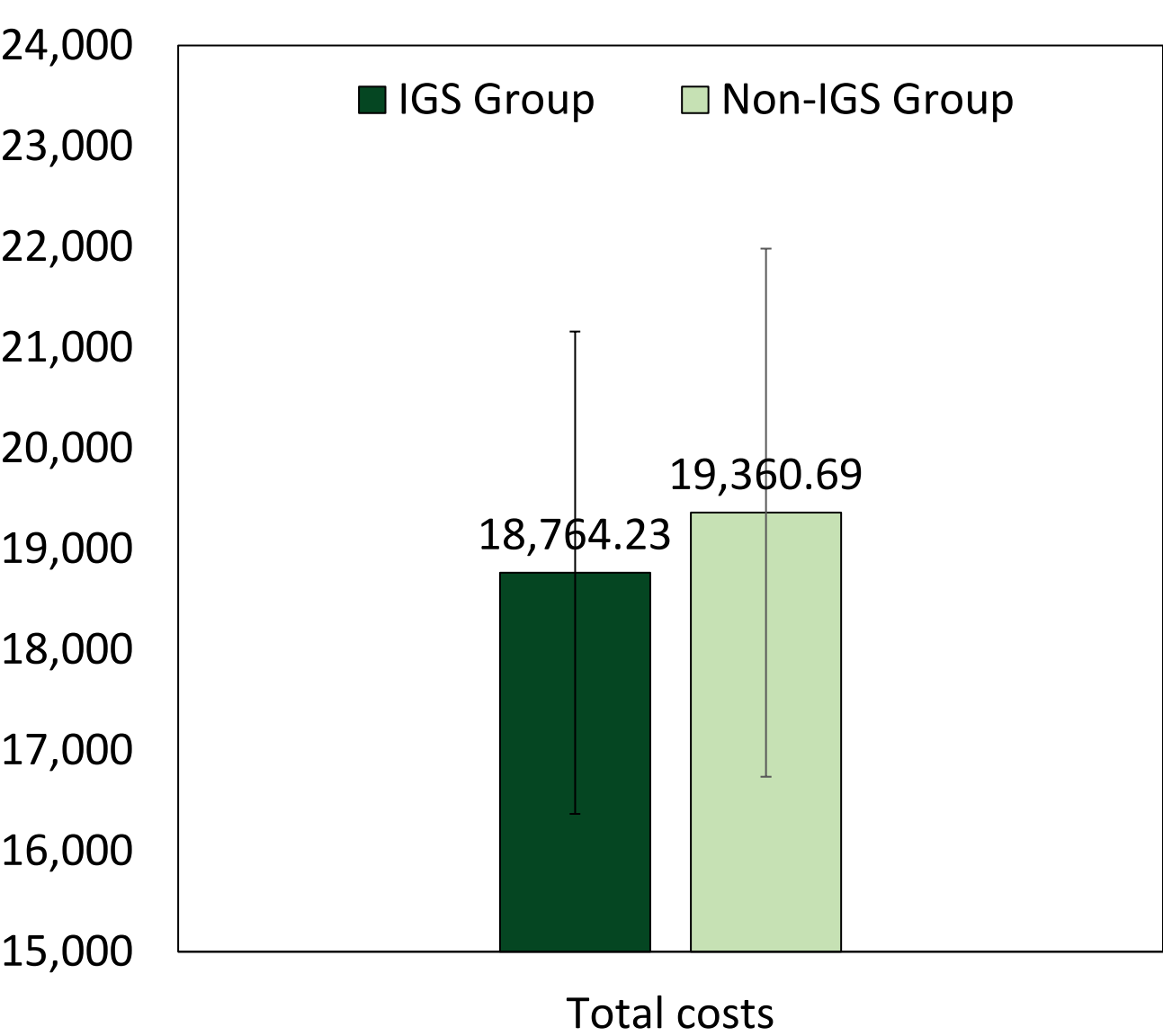


Figure 1 Total cost of sphenoid sinus in IGS and Non-IGS Group

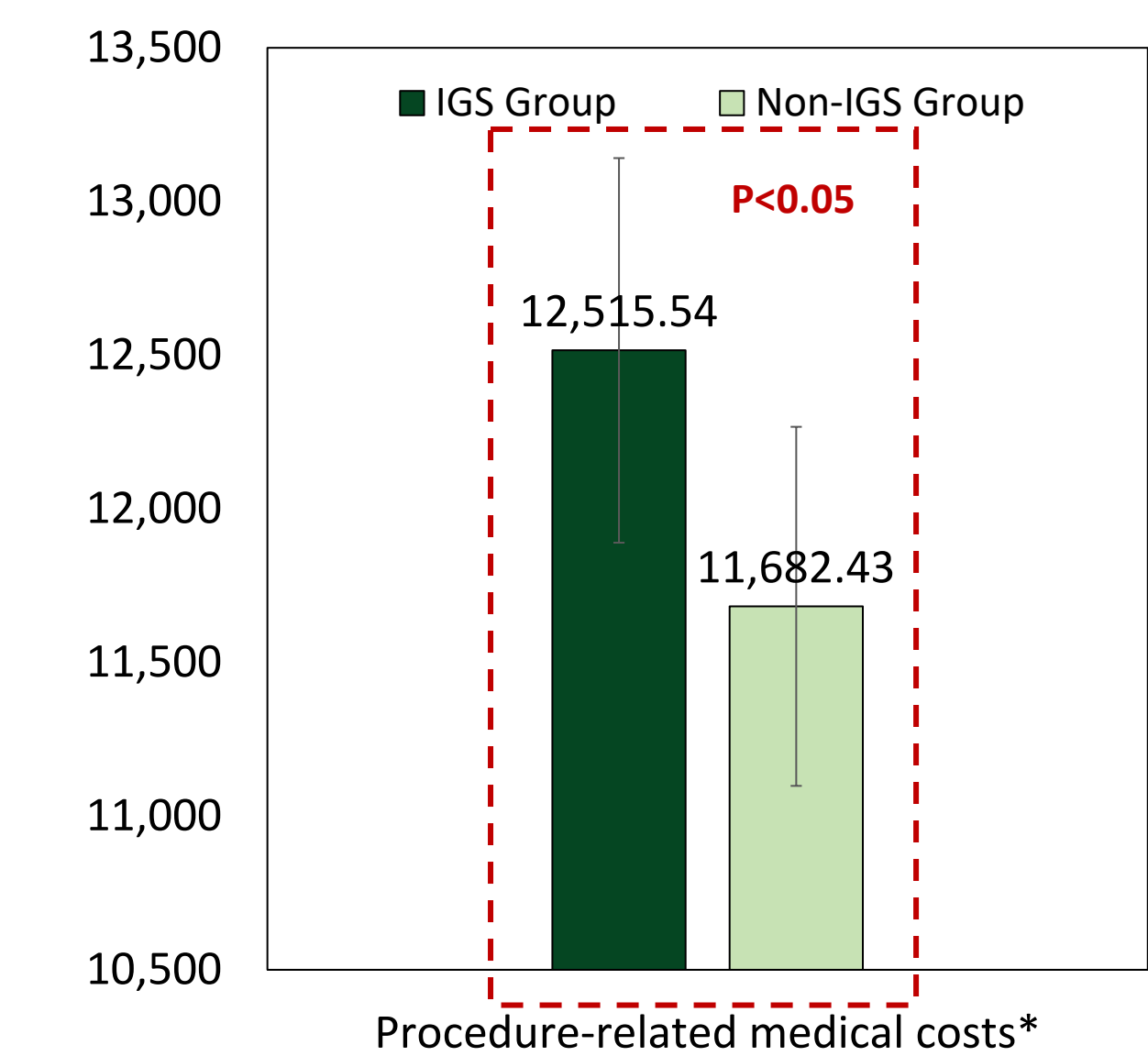


Figure 2 Procedure-related medical costs in IGS and Non-IGS Group

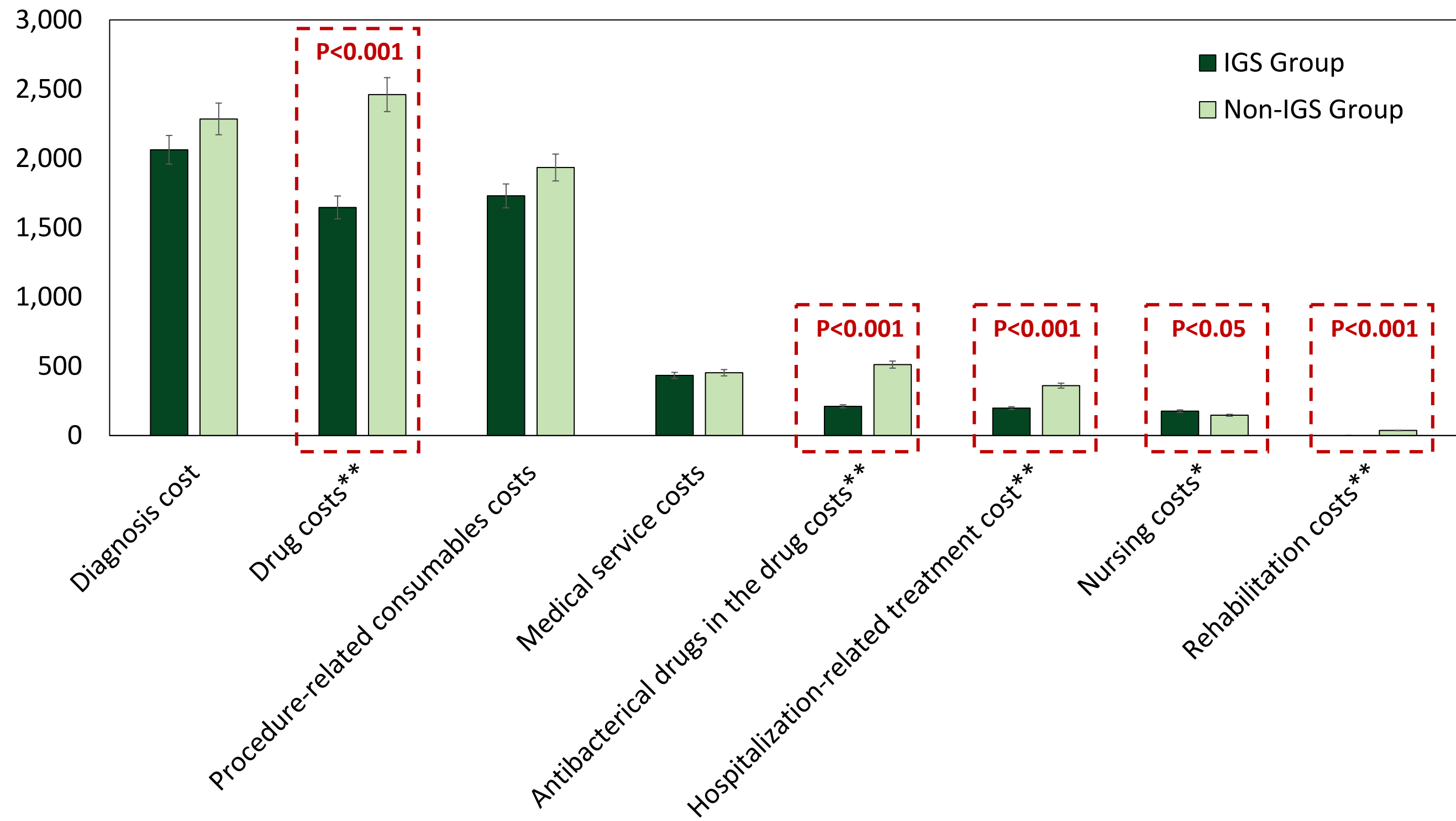


Figure 3 Others costs in IGS and Non-IGS Group

Result

There was no statistical difference in the baseline characteristic between the IGS and non-IGS groups (P>0.05) in Table 1.

Table 1 Baseline characteristics for patients with functional endoscopic sinus surgery

Variables	IGS (N=38)	Non-IGS (N=46)	P-value
Age			
	41.24 (11.23)	40.98 (11.88)	0.919
	38 [34,39]	33 [40,48]	0.801
Gender			
Male	26 (68.42)	38 (82.61)	0.207
Female	12 (31.58)	8 (17.39)	-
History of previous surgery, n (%)			
Sinus related surgery	8 (21.05)	1 (2.17)	0.015
Functional endoscopic sinus surgery	1 (2.63)	1 (2.17)	1.000
History of disease, n (%)			
Hypertension	1 (2.63)	5 (10.87)	0.301
Diabetes	1 (2.63)	0 (0.00)	0.923
Kidney disease	1 (2.63)	0 (0.00)	0.923
Hepatobiliary disease	3 (7.89)	2 (4.35)	0.825
Gastrointestinal disease	1 (2.63)	2 (4.35)	1.000
Lung disease	5 (13.16)	2 (4.35)	0.290

Conclusions

IGS appears to serve as a valuable adjunct in safe intraoperative dissection. The use of an IGS for FESS involving sphenoid sinus may reduce the complications associated with the procedure and allow for a potentially cost-effectiveness operation.

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