Economic Positioning Of Surgery With Absorbable Steroid-Eluting Sinus Implants Versus Dupilumab In Severe CRSwNP: An Italian National Health Service Payer Perspective

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INTRODUCTION

Chronic rhinosinusitis with nasal polyps (CRSwNP) is a chronic inflammatory disease characterized by persistent sinonasal inflammation and nasal polyps. CRSwNP has an estimated prevalence of approximately 4.3% in Europe.

Despite medical and surgical treatment, the disease may remain uncontrolled or recur, requiring repeated courses of systemic corticosteroids, revision surgery, or long-term biologic therapy.

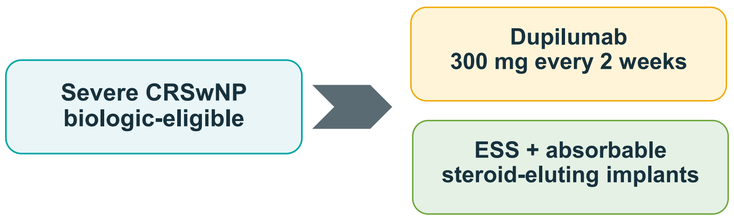
Selecting the appropriate treatment sequence is relevant to balance disease control, treatment sustainability, and efficient use of healthcare resources.

OBJECTIVE

Assess the economic positioning of endoscopic sinus surgery (ESS) with absorbable steroid-eluting sinus implants versus dupilumab from the Italian National Health Service payer perspective.

METHOD

Payer-oriented scenario analysis from the Italian National Health Service perspective, using a 6-month time horizon.



POPULATION
Patients with severe CRSwNP, prior treatment failure, and potential eligibility for biologic therapy:

- age ≥18 years;
- NPS ≥5 and/or SNOT-22 ≥50
- inadequate symptom controls

COSTS
Direct treatment only; no downstream HRCU included

RESULTS

Clinical evidence indicates that ESS provides substantial early reduction in polyp burden, while the addition of steroid-eluting implants is associated with improved postoperative disease control, reflected by significant improvements in SNOT-22 (Figure 1)[4], and significant reduced need for revision surgery up to 12 months (Figure 2)[5] compared to FESS-alone.

Given that selected patients with severe CRSwNP may be considered for either escalation to biologic therapy or further surgical management, the direct treatment cost of the implant-enhanced surgery-based strategy was compared with 6 months of dupilumab treatment (Figure 3).

Figure 1. SNOT-22 Domain Score through 6 months

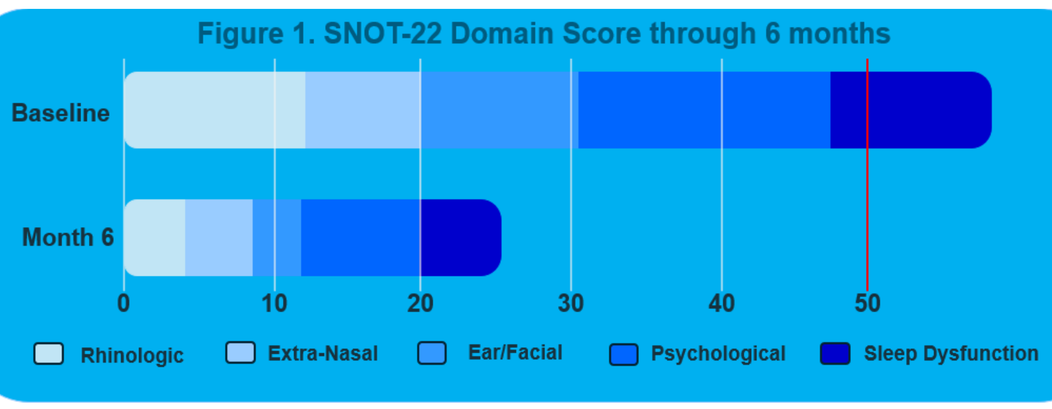


Figure 2. Post Operative Intervention (Biologics or Revision Surgery)

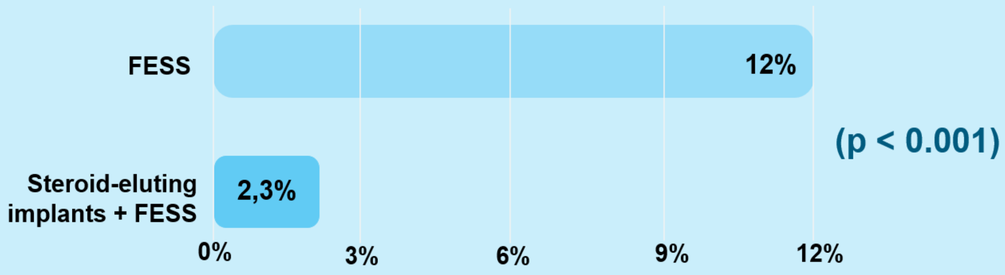
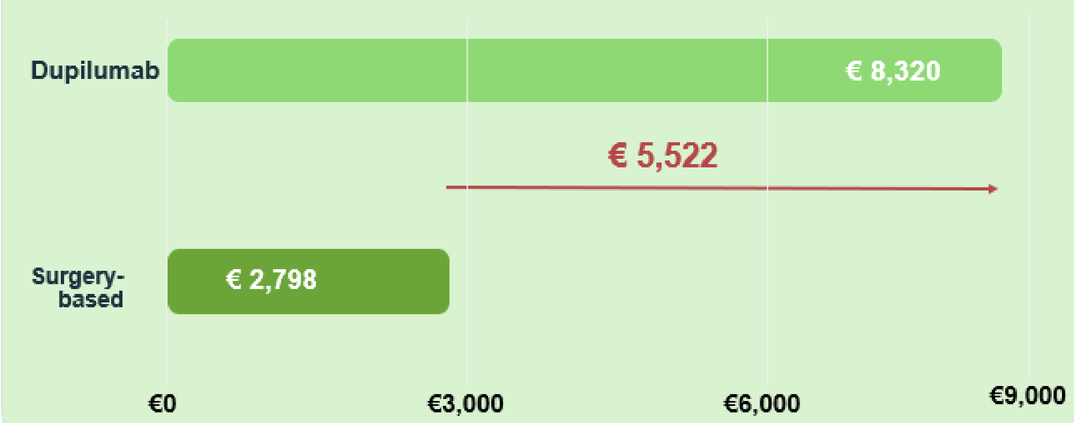


Figure 3. 6-MONTH DIRECT TREATMENT COST PER PATIENT



Italian direct treatment costs were considered: dupilumab €640 per dose over 6 months (approximately €8,320) and DRG-based surgical reimbursement (€2,798).

The surgery-based strategy resulted in €5,522 lower direct treatment costs per patient over 6 months compared with dupilumab. As downstream healthcare resource use was excluded, the potential economic implications of improved postoperative control and fewer revision procedures were not captured in the analysis.

CONCLUSIONS

From NHS payer perspective, a **surgery-based approach incorporating steroid-eluting implants** may represent an effective strategy to **optimize disease control** in **selected severe CRSwNP patients**, potentially delaying or reducing biologic therapy need.

By improving postoperative outcomes and supporting sustained sinus patency, this approach may contribute to **more efficient allocation of healthcare resources** within the care pathway, while reducing the economic burden associated with recurrent disease management and high-cost treatments. Further real-world economic studies are warranted to quantify value, including cost implications.

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