

# Fondaparinux: A Cost Saving Alternative to Low-Molecular-Weight Heparins for Venous Thromboembolic Event Prevention/Treatment and Acute Coronary Syndrome Treatment

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## Background

- VTE (including DVT and PE) and ACS are associated with morbidity and mortality<sup>1,2</sup>
- Fondaparinux and LMWHs are used for prevention of VTE and treatment of VTE and ACS<sup>3-7</sup>
- LMWHs are associated with HIT, a rare but serious complication with further risk of morbidity (e.g. DVT, PE, major bleeding, and amputation) and mortality<sup>4-7</sup>
- Unlike LMWHs, fondaparinux is not expected to cause HIT, thereby reducing occurrence of its associated complications<sup>3</sup>

## Objective

- To estimate potential cost-savings and budget impact of fondaparinux vs LMWHs in VTE prevention and VTE/ACS treatment

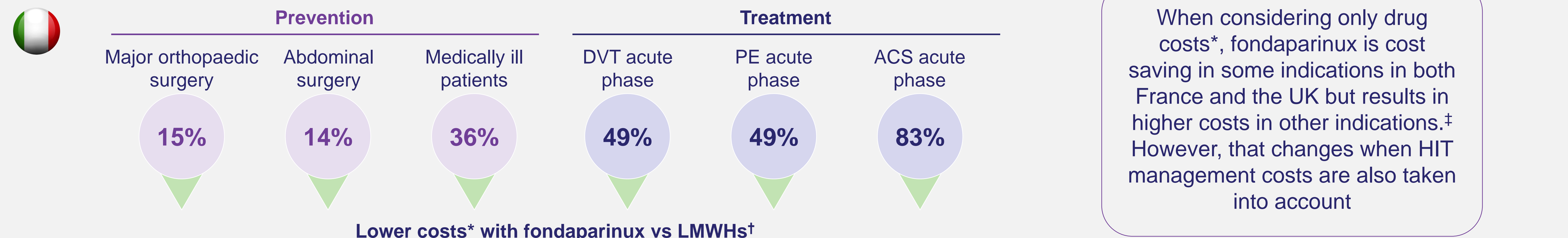
## Methods

- A model, adapted for Italy, France and the UK, to assess 1) per-patient costs of VTE prevention and VTE/ACS treatment [calculated based on clinical practice posology and list prices/cost per DDD]; 2) impact of AEs on per-patient costs; 3) the budget impact of fondaparinux vs LMWHs in Italy, from a national healthcare system perspective

Input/method	Details
Drug prices for fondaparinux and LMWHs	<ul style="list-style-type: none"><li>Italy: cost per DDD (national health authority data)</li><li>France: cost per DDD (reimbursed list price), based on the fondaparinux currently commercially available in France</li><li>UK: cost per DDD (NHS drug tariff)</li></ul>
Clinical input data	<ul style="list-style-type: none"><li>Derived from clinical practice (e.g. posology, dosing, treatment duration)</li></ul>
Adverse event costs	<ul style="list-style-type: none"><li>HIT incidence: 0.44%<sup>8</sup></li><li>Average cost per HIT event:<ul style="list-style-type: none"><li>~€10,000<sup>9-12</sup></li><li>Calculated from HIT-related risks (DVT, PE, amputation, death)<sup>10-12</sup></li></ul></li></ul>
Market share in Italy (BIM)	Internal assumption
Italian target population (BIM)	Based on incidences per indication and derived from epidemiology data <sup>13,14</sup>

## Results

### Fondaparinux results in lower per-patient drug costs vs LMWHs in Italy



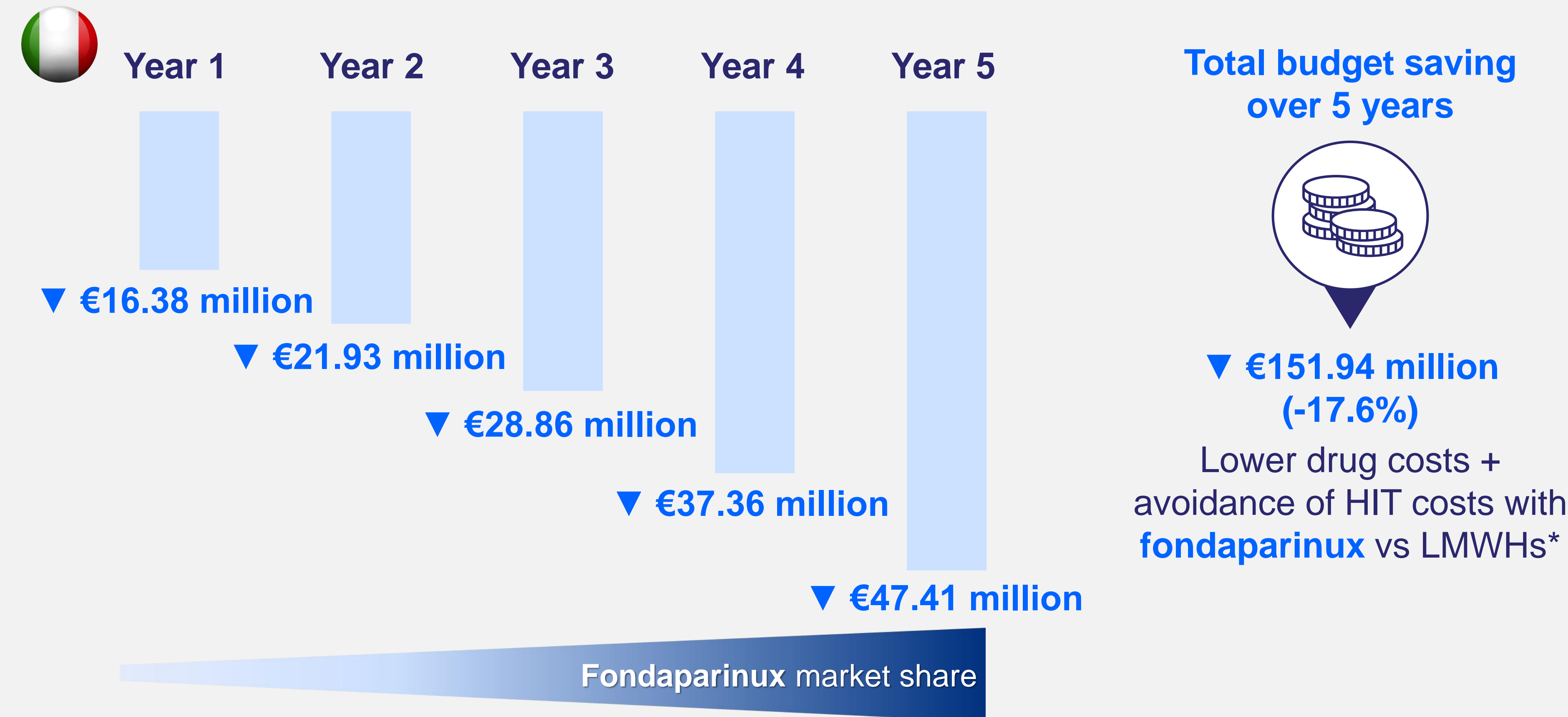
\*Based on drug costs per treatment cycle of fondaparinux vs LMWHs (calculated using clinical practice posology and list prices/costs per DDD); †Including enoxaparin, nadroparin, tinzaparin and parnaparin; ‡depending on comparator LMWH in each market

### Fondaparinux is cost saving in all markets and indications when considering costs for drugs and managing HIT, associated with LMWHs

		Italy	France			United Kingdom		
		vs LMWHs*	vs enoxaparin	vs nadroparin	vs tinzaparin	vs enoxaparin	vs dalteparin	vs tinzaparin
Prevention	Major orthopaedic surgery	▼ 78%	▼ 60%	▼ 58%	▼ 60%	▼ 16%	▼ 13%	▼ 24%
	Abdominal surgery	▼ 87%	▼ 75%	▼ 73%	▼ 75%	▼ 47%	▼ 46%	▼ 50%
	Medically ill patients	▼ 88%	▼ 75%	▼ 75%	▼ 74%	▼ 47%	▼ 46%	▼ 47%
Treatment	DVT acute phase	▼ 76%	▼ 48%	▼ 51%	▼ 54%	▼ 30%	▼ 11%	▼ 32%
	PE acute phase	▼ 76%	▼ 48%	▼ 51%	▼ 54%	▼ 30%	▼ 11%	▼ 32%
	ACS acute phase	▼ 96%	▼ 90%	▼ 90%	▼ 88%	▼ 79%	▼ 77%	▼ 75%

\*Including enoxaparin, nadroparin, tinzaparin and parnaparin; Based on drug costs per treatment cycle of fondaparinux vs LMWHs (calculated using clinical practice posology and list prices/costs per DDD) and costs of managing HIT and HIT consequences (DVT, PE, amputation, death); Assuming no HIT-related costs for fondaparinux

### Lower per-patient costs result in substantial budget savings with increasing use of fondaparinux vs LMWHs in Italy



Assuming discounted drug prices, no HIT-related costs for fondaparinux and Italian eligible population per indication  
\*Including enoxaparin, nadroparin, tinzaparin and parnaparin;

## Conclusions

- Use of fondaparinux avoids the risk of HIT and associated management of high-cost complications expected with LMWHs
- Fondaparinux therefore provides cost savings vs LMWHs in this model for Italy, France and the UK, when considering HIT-related costs associated with LMWHs in addition to drug costs
- Cost savings, driven by avoidance of HIT-related costs, result in substantial budget savings with increasing use of fondaparinux compared with LMWHs in the BIM conducted for Italy
- These results show the importance of considering costs associated with HIT management and overall budget impact in pricing and reimbursement decision-making for VTE prevention/treatment and ACS treatment
- Per-patient drug costs based on the ATC/DDD system alone are insufficient for pricing and reimbursement decisions<sup>15</sup>

## References

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## Abbreviations

ACS, acute coronary syndrome; ATC, Anatomical Therapeutic Chemical Classification System; BIM, budget impact model; DDD, defined daily dose; DVT, deep vein thrombosis; HIT, heparin-induced thrombocytopenia; LMWH, low-molecular-weight heparin; NHS, national health system; PE, pulmonary embolism; UK, United Kingdom; VTE, venous thromboembolism

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