Perspective économique sur les traitements ciblés

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SESSTIM

Societal Context

- ↑ Individualism in developed countries

  ≠ collective mobilization among patients

- Personalized medicine

  ↑ satisfaction as regards patients' demand
  for more transparency of the medical information

  ↑ involvement in medical decision-making

  BUT

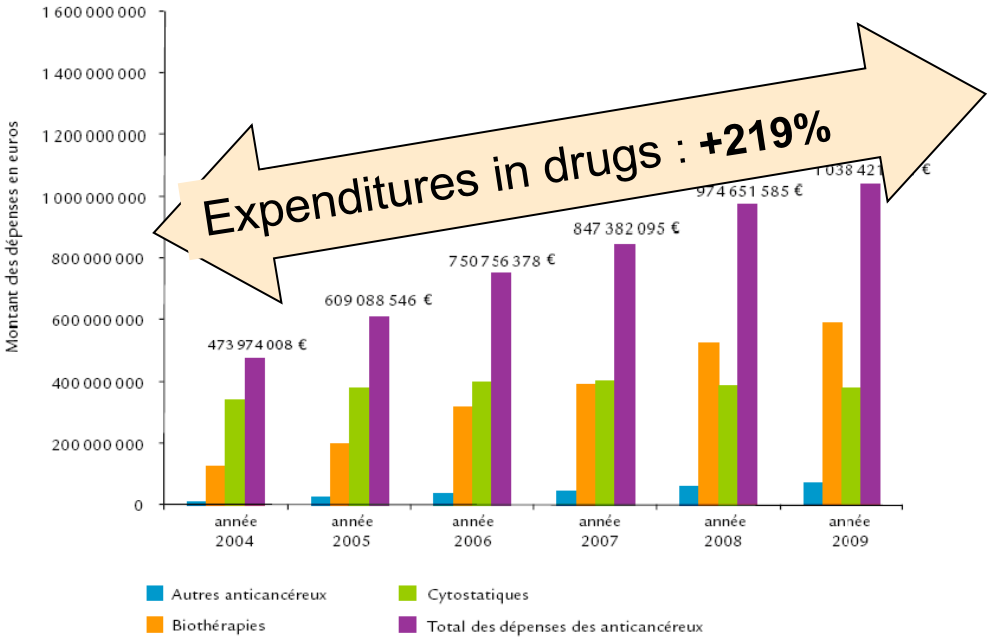
  ↑ difficult communication on information on risks

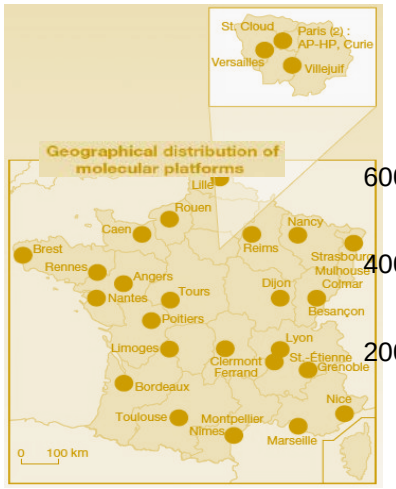
Sources : A Sarradon-Eck et al. *Soc Sci Med*, 2012
C Julian-Reynier et al. *Médecine Sciences*, Hors Série 1, 2012

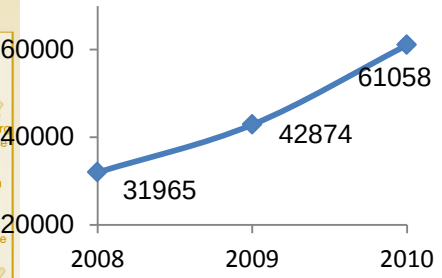
Personalized medicine

- **Societal**
  - Response to the patients' demands for more involvement in medical decision-making?
- **Technical**
  - Stratified or precision medicine ?
- **Industrial**
  - Response to the « crisis » of pharmaceutical innovation?
- **Economic**
  - Response to the decreasing return of scale of biomédical innovation?

Economic context







28 cancer molecular genetics hospital platforms

- **Current Context**
  - **Increased numbers of biomarkers and genomic tests**
  - **Increased numbers of targeted therapies in clinical practice**

Extra costs of tests compensated by greater cost-effectiveness ratios of targeted treatment as compared to standard treatment?

Are the extra costs of tests compensated by greater cost-effectiveness ratios ?

- **Yes for KRAS mutations in metastatic colorectal cancer** (Blank et al, *Clin Cancer Res*, 2011)
- **Yes for EGFR mutations in advanced lung adenocarcinoma** (De Lima Lopes et al, *Cancer*, 2011)

- **What about the other indications ?**
- **What about the other biomarkers / génomic tests ?**

- **What relationship between the pricing of tests and the pricing of the drug targeted?**

Breast Cancer Res Treat (2011) 129:401–409
DOI 10.1007/s10549-010-1242-z

PRECLINICAL STUDY

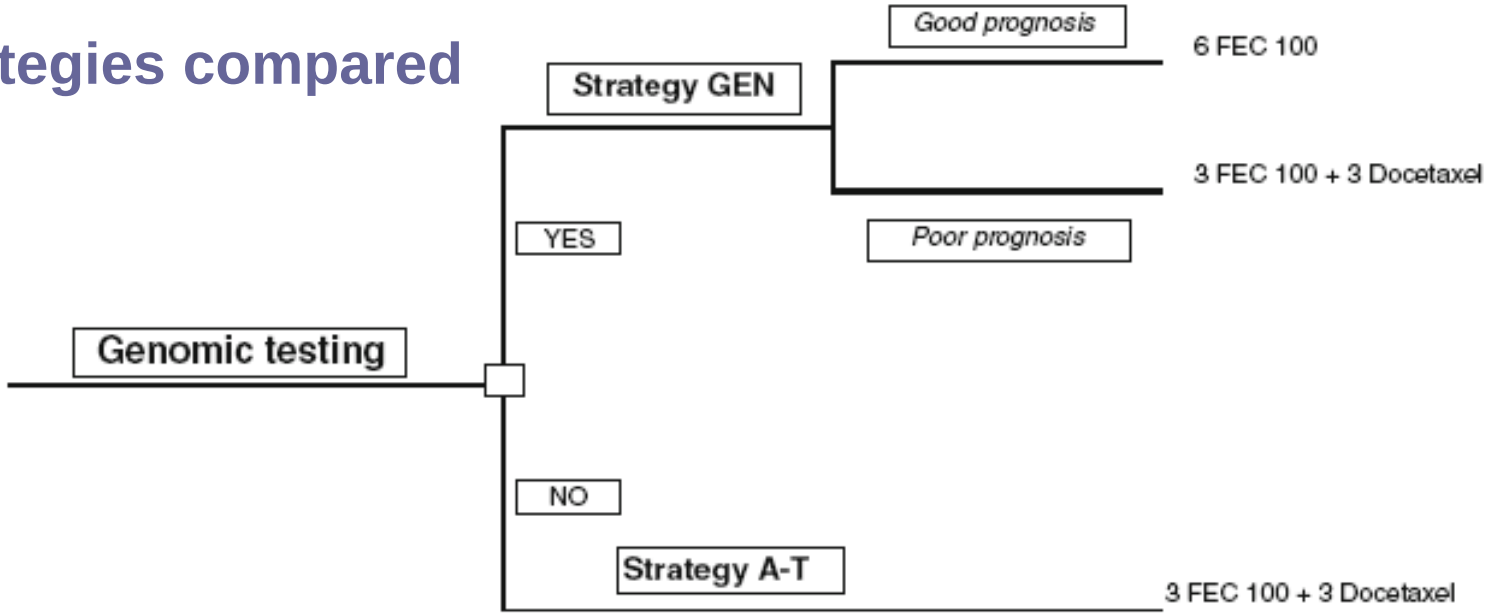
Economic issues involved in integrating genomic testing into clinical care: the case of genomic testing to guide decision-making about chemotherapy for breast cancer patients

Patricia Marino · Carole Siani · François Bertucci · Henri Roche · Anne-Laure Martin · Patrice Viens · Valérie Seror

To assess the impact of genomic testing to guide decision-making about chemotherapy in breast cancer patients: Cost-effectiveness analysis

Retrospectives data *(Bertucci et al. 2010)*

The strategies compared



Effectiveness

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PRECLINICAL STUDY

All patients $n = 246$	Receiving	
	6 FEC 100[a] ($n = 128$)	3 FEC 100 + 3 docetaxel[b] ($n = 118$)
Good prognosis ($n = 197$)	$n = 105$	$n = 92$
5-year MFS		
% Survival	87.0	84.9
95% CI	[78.6%; 92.3%]	[75.3%; 91.0%]
Poor prognosis ($n = 49$)	$n = 23$	$n = 26$
5-year MFS		
% Survival (95% CI)	60.9	69.2
95% CI	[38.3%; 77.4%]	[47.8%; 83.3%]

No clinical benefit associated with the adjunction of taxanes

Significant clinical benefits associated with the adjunction of taxanes

Results

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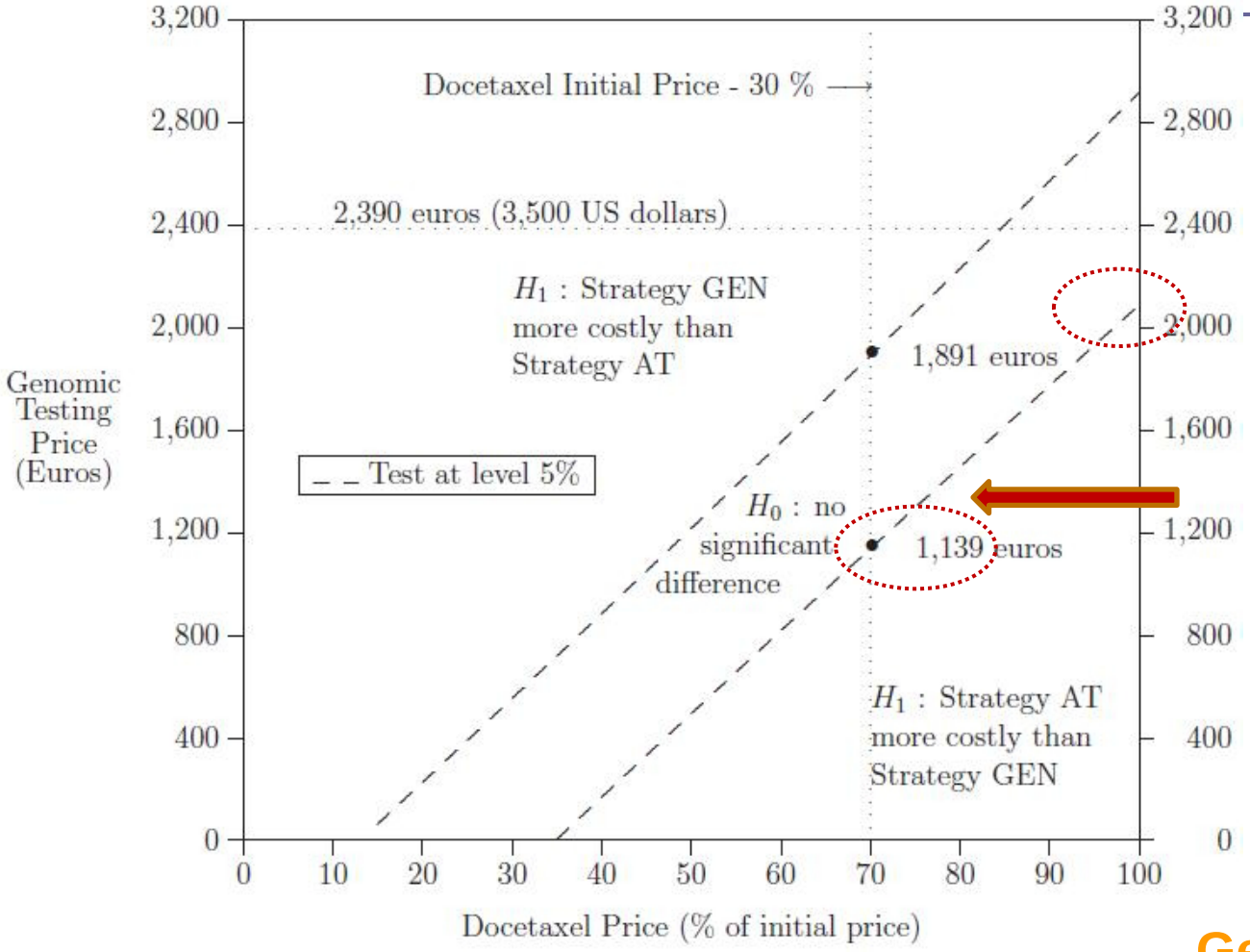
PRECLINICAL STUDY



Cost of genomic testing for which the strategy GEN is cost-effective:

2090€

1139€ if 30% decrease in price of docetaxel (generic drug)

Genomic test : a cost-effective option

Regulatory issues

- **Cost-effectiveness analysis**
  - Interdependency between the pricing of tests and of drugs
  - Complementarity between tests and the drug targeted
- **The issues raised by the pricing of tests cannot be reduced to a matter of balancing health insurance budgets**
  - Trade-offs between facilitating the adoption of therapeutic innovations and ensuring their affordability
  - Decision-making about pricing have an impact on the biotechnological and pharmaceutical sectors
- **Organizational barriers**
  - Need for more cooperation between regulatory bodies for the assessment of the added value of tests and in decision-making about pricing

Conclusion

- **Test = therapeutic targeting**
  - To prescribe treatments to the only patients likely to benefit from them (effectiveness ++)
  - To avoid prescribing treatments that are useless, costly (costs --) and expose to toxicities (quality of life ++)
    - **Studies on the long term impact of the toxicity associated with cancer treatments (e.g. CANTO cohort)**
- **Targeting treatments on the patients likely to benefit the most from them**
  - Might prevent therapeutic escalation and the corresponding costs
  - Cost-effectiveness analyses systematically alongside the clinical trials of targeted therapies

Médecine personnalisée

- **Technique**
  - Médecine stratifiée ou de précision ?
- **Sociétal**
  - Réponse aux demandes des patients pour plus d'implication dans les décisions médicales ?
- **Economique**
  - Réponse aux rendements décroissants du progrès biomédical ?
- **Industriel**
  - Réponse à la « crise » de l'innovation pharmaceutique ?