



Impact économique d'une innovation technologique dans une indication chirurgicale en ophtalmologie

Economic impact of a technological innovation in a surgical ophthalmic indication



EyeTechCare
High Tech for Eye Care

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HEALTHCARE TECHNOLOGY FROM INNOVATION TO MARKET
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What is the method for estimating
the "true value" of a healthcare technology?

EyeTechCare: the company

- EYETECHCARE founded in july 2008
- Close collaboration with INSERM U556 (Therapeutic Ultrasound) and common patents
- EYETECHCARE propose a new type of treatment for Glaucoma, based on HIFU technology
- Since 2008, the company has raised 12M\$ with french VCs
- The first human clinical trial started in 03/2010, with excellent results
- CE mark expected early next year

Glaucoma affects large populations



Glaucoma population = 70 M

- 1st cause of blindness in developed countries
- 2nd cause of blindness worldwide (source WHO)

Glaucoma : evolution

- Patients's hopeless progression to blindness

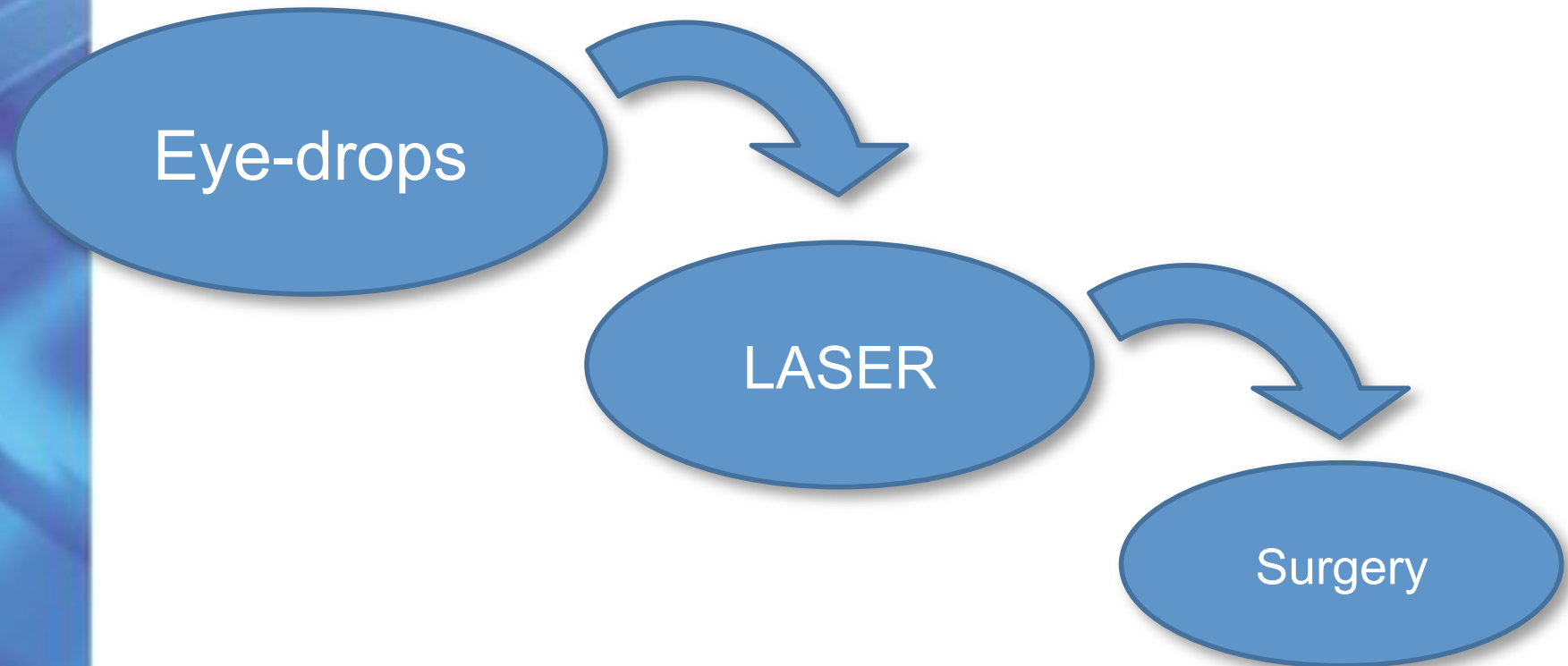


3-15
years



Current treatments fail

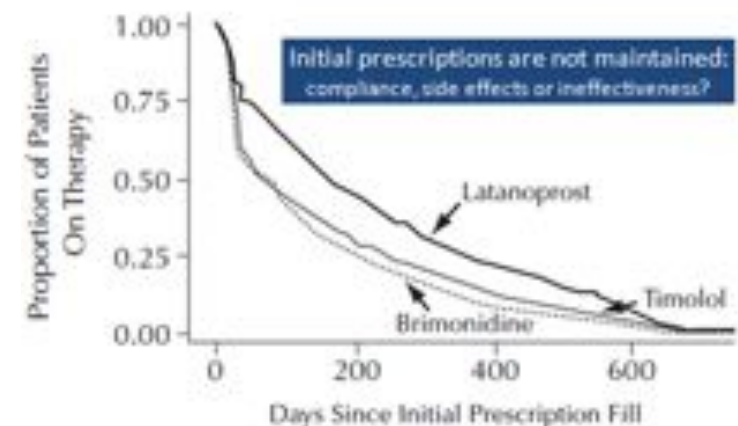
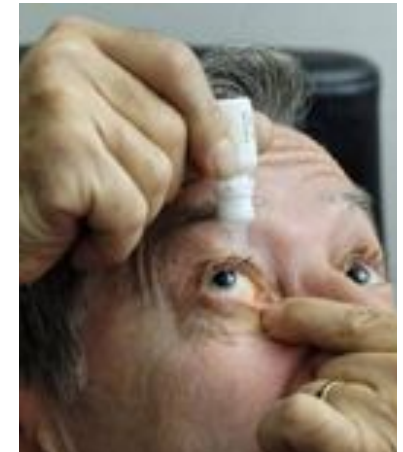
- A cascade of ever more risky treatments



Eye-drops

■ Despite improvements, major shortcomings

- Low compliance
- Several administrations per day
- Poor acceptance by older patients
- Side effect and poor tolerance
- Monotherapy is rare
- High drug cost:
 - Monotherapy: 500\$/year
 - Multitherapy: 800\$/year
- After 2 years, 50% of patients need something else

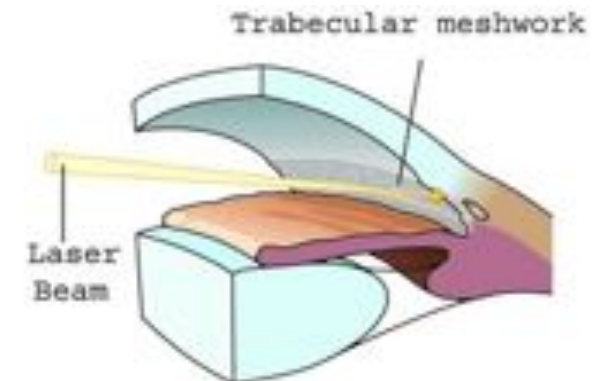
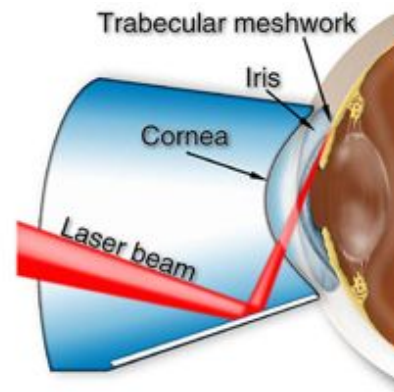


Source: US retrospective study analyzing 72 744 prescriptions

Laser trabeculoplasty

■ Treatment has following issues

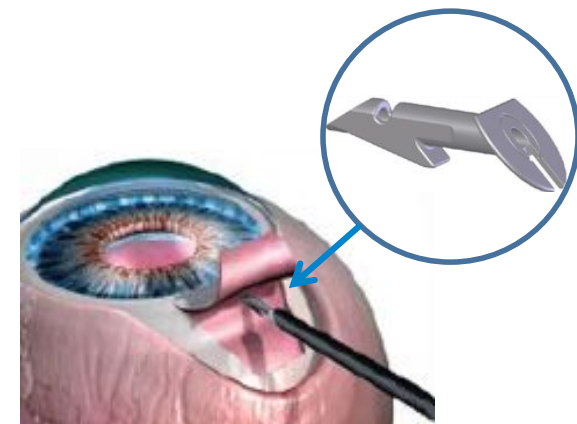
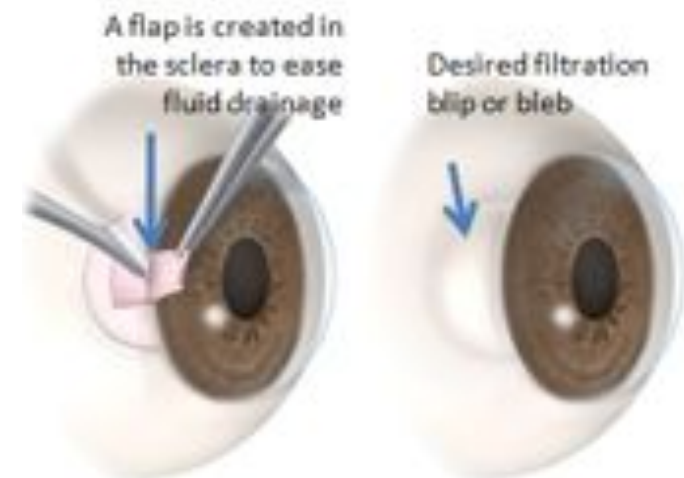
- More difficult to do well than it seems (20 to 40 shots in 2 visits)
- Poor efficacy:
 - 50 % failure at 5 years
 - Efficacy diminishes if repeated



Surgery

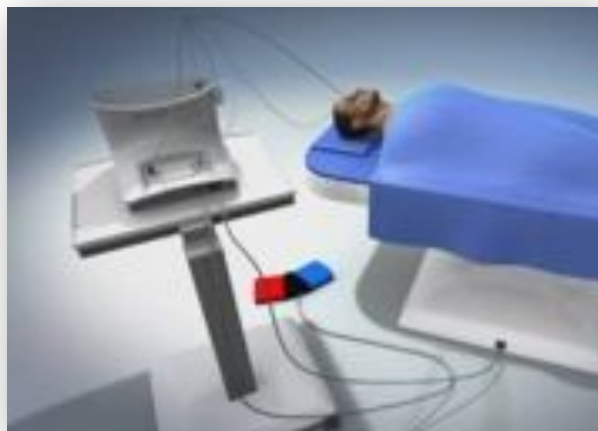
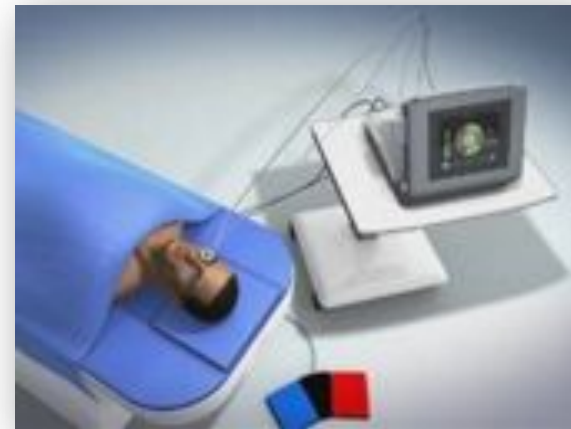
■ Issues

- Surgeon dependant
- High risk (severe hypotonia, infection)
- Poorly tolerated by patients post-op: Bleb
- Poor efficacy
 - 50 % failure at 5 year
 - Side effects
- Glaucoma Drainage Device : finding ways to improve surgery at higher price (1000\$ each)

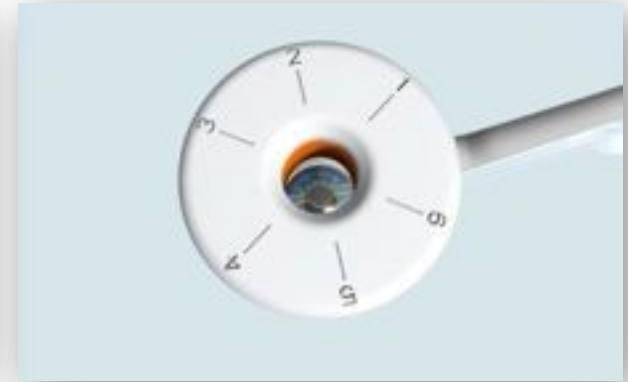


EyeOP1 : the control module

- A compact and ergonomic system



EyeOP1: the device



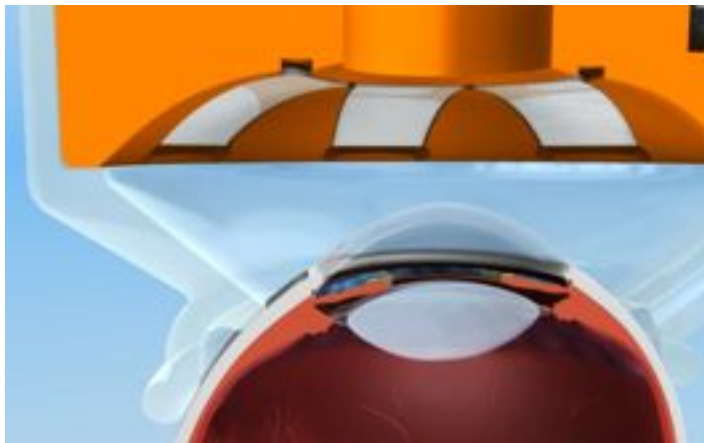
EyeOP1: the procedure



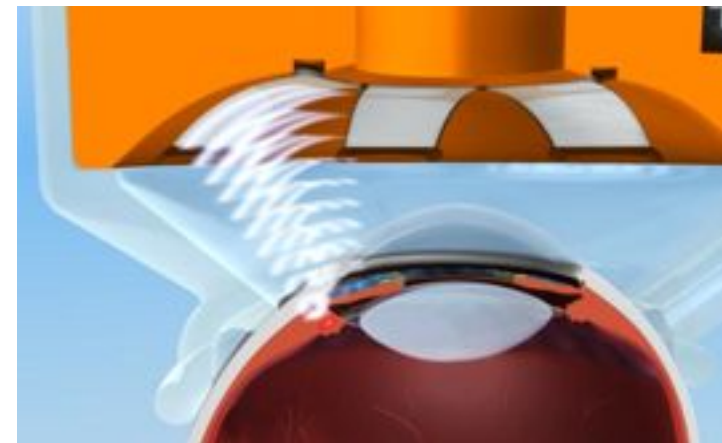
1 Centering of the cone and activation of the suction ring



2 Insertion of the therapy probe in the cone



3 Device in place before the start of the procedure



4 Start of the shooting sequence and sequential activation of the transducers

Advantages :

What are the advantages of this technology ?

- **Ambulatory** and **non-invasive**
- Non manual and non operator dependent
- Learning curve extremely short (3 hours)
- High accuracy, very low risk
- Fast (the procedure lasts only 1 minute)
- **Efficient** (very significant lowering of the Intra ocular pressure) AND very good **Tolerance** (no side effects and no pain after treatment)
- Probably **durable** even **definitive** effect
- Significant **lowering of the costs** related to the treatment of glaucoma

Economic impact

Why the costs are reduced by a technological innovation ?

- Cost of the equipment and consumables
- Cost of the training
- Cost of the procedure
- Cost of the clinical outcomes
- Cost of the heterogeneity of the results
- Cost of patient compliance and fear
- Cost of blindness

Economic impact

EyeOP1 is a low price equipment

- Cost of the equipment and consumables
 - Cost of the device comparable to the cost of one year daily treatment with eye drops
 - A single surgical procedure costs as much as five EyeOP1 treatments
 - EyeOP1 module is a low cost equipment, as only essential technology have been implemented in the module, and no expensive components have been implemented in the single use device

Economic impact

EyeOP1: a procedure extremely easy to learn

- Cost of the training in other techniques
 - Cost for manufacturer increasing the cost of the equipment when the device is not EASY TO USE
 - 100 surgeries are necessary for a specialist to be qualified
 - With this technological procedure, the efficiency is excellent from the first patient
 - The risk level and insufficient clinical outcomes due to a non qualified surgeon are generating high costs

Economic impact

EyeOP1: a procedure which doesn't need expensive resources

- Cost of the procedure and patient's care
 - This technological procedure for treating glaucoma takes ONE minute
 - Local anesthesia: no general anesthesia required
 - Non invasive → operating room not necessary, sterile environment not necessary
 - Only one or two persons to run and configure the instrument
 - Outpatient procedure, the patient can go home the same day

Economic impact

EyeOP1 brings durable efficiency and good tolerance

- Cost of the clinical outcomes with other techniques
 - Low level of efficiency = high level of recurrence → retreatments are necessary, which leads to a higher risk a lower efficiency and deteriorating health of the patient
 - Side effects :
 - Eye drops : poor tolerance, discomfort, side effects
 - Surgery : infection, inflammation, eye atrophy, pain, implant migration, discomfort

Economic impact

EyeOP1: when technology makes consistent results

- Cost of the heterogeneity of the results
 - Eliminating the “human factor” which can lead to errors
 - Giving all patients the chance to benefit from the same quality of treatment
 - Reducing hazards and increasing the repeatability

Economic impact

A solution to reassure patients

- Cost of patient compliance and fear
 - non-acceptance of treatment by the patient leads to high costs because of the progression of his disease
 - non-acceptance comes from fear of surgery due to risk of failure, pain or discomfort
 - technology is a factor of greater acceptance

Economic impact

A solution to fight against blindness

- Cost of blindness
 - a patient that the glaucoma disease leads to blindness generates a significant cost to society



Thank you for your kind
attention !