Pharmacology of immunosuppressive drugs and transplantation

Pharmacology of immunosuppressive drugs and antivirals on transplant patients

RESEARCH THEMES >

KEYWORDS >
Pharmacokinetics
Pharmacogenetics
Biomarkers
Toxicity
Pharmacoeconomics
Pharmaco-epidemiology

Pharmaco-economy
Translational Research
Clinical Research
Transplantation
Immunosuppressive Drugs

2012
The S-850 Joint Research Unit carries out translational research on drugs used in transplants with the aim of optimizing their benefit/risk balance, based on a personalized medicine approach.

This research focuses on:

- Identifying pharmacokinetic, pharmacogenetic, pharmacodynamic and environmental factors of (therapeutic and toxic) response variability.

- Validating the clinical and medico-economic interest of this personalized medicine.

- Describing and modelling the therapeutic and adverse effects of immunosuppressive drugs in the long-term and their impact on graft survival.

- Understanding the molecular mechanisms of the renal and cardiovascular adverse effects of these drugs.

INDUSTRIAL APPLICATIONS
The ABIS/ISBA website on individualized dosing for transplant patients, developed based on the UMR-S850 results, received over 9,000 requests in 2011, from more than 60 transplant units, including a dozen foreign units (Europe, North America, South America and North Africa).

The site’s activity in France is financed through inter-hospital invoicing. (https://pharmaco.chu-limoges.fr)

SERVICES PROVIDED
“Advice, expertise, training”: the team provides clinicians and biologists with access to its tools for adapting the dose of immunosuppressive drugs, via a website hosted by Limoges University Hospital (CHU).

FIELDS OF APPLICATION
Health, pharmaceutical, bio-industry: pharmacology, organ transplants

EQUIPMENT / TECHNICAL RESOURCES
Mass spectrometry
Proteomic analysis
Pharmacokinetic modelling
PCR, real-time PCR
Cell culture
Molecular biology
KEY FIGURES
(at 1st January 2012)

Teacher-researchers: 8
Other researchers: 7
HDR (habilitated to direct research): 7
Doctoral students in 2011-2012: 6
Engineers, technicians: 7
Administrative agents: 1
PhD theses defended (2008-2011): 8
Current national projects: 1 INSERM joint venture agreement for hospitals.
Participation in the ANR GENOPAT agreement.
Others: Several clinical research projects, financed by the French national PHRC (Clinical Research Hospital Programme),
1 inter-regional tender, the AFSSAPS (French Agency for the Safety of Health Products), French Biomedicine Agency, the French Cysticfibrosis Association - Vaincre la Mucoviscidose and the Limousin Organizing Committee for Cancer Research (CORC)

ECONOMIC ADDED VALUE
(2008-2011)

Number of industrial or research agreements with major organizations: 6
Conferences, seminars organized: 2

Research Federation:
GEIST (FR 3503)

PARTNERSHIPS

Active National University Partnerships:
Pharmacology of Immunosuppressive Drugs (Besançon University Hospital), Pharmaco-
genetics (INSERM U775, Paris Descartes University), PK and PK/PD Modelling (Dr. Saïk Urien, DR INSERM, CIC-0901, Univ. Paris Descartes), Proteomics and Biomarkers (6 French partners in the European BIOMARGIN project coordinated by the 850 Joint Research Unit); clinical trials with kidney, liver, heart and lung transplant centre networks; clinical transfer of personalized medicine tools via the unit’s website, which is used by around forty transplant units in France

Current International University Partnerships:
Pharmacology of Immunosuppressive Drugs (in Belgium, the Netherlands and Germany), Pharmacokinetics (The Centre for Pharmacogenomics at UCSF, USA), PK, PK/PD and Pathology Modelling (L.A. PK lab, USC, USA; N. Holford, Univ. Auckland, New Zealand); Proteomics and Biomarkers (5 partners with Germany, Belgium, Sweden and the Netherlands in the European BIOMARGIN project, coordinated by the 850 Joint Research Unit); lung transplant clinical trials (Hospital Erasme, Brussels); clinical transfer of personalized medicine tools via the unit’s website, which is used by a dozen international transplant units (European, American, Asian and North African).

National Industrial Partnerships:
Agreements with the pharmaceutical industry (Roche Pharma, Novartis, Astellas) for developing tools for adapting the dose of immunosuppressive drugs. Agreements with the diagnostic industry (Abbott, Roche Diagnostics, Siemens) for validating new diagnostic tests.

International Industrial Partnerships:
- Agreements with the pharmaceutical industry (Roche Pharma, Astellas, BMS) for pharmacokinetic studies and for developing tools for adapting the dose of immunosuppressive drugs.
- Agreements with the diagnostic industry (Abbott, Roche Diagnostics, Siemens) for validating new diagnostic tests.
- Agreements with the instrumentation industry (Thermo, Waters) for assessing new equipment.

Partnerships with National Organizations and Institutions:
INSERM – CHU (University Hospital) of Limoges
SCIENTIFIC PRODUCTION
OF RESEARCH TEAM
(2008-2011)

Website publication: hal.archives-ouvertes.fr/UMR-S850
Articles: 94 international and 94 in peer-reviewed journals
Number of works: 1
Books chapters: 3
Conference presentations: 20 national and 41 international
Others: 66 invited lectures and 5 presentations displayed without proceedings

Major publications and/or patents over the last 5 years


• Marquet P. “Counterpoint: Is Pharmacokinetic or Pharmacodynamic Monitoring of Calcineurin Inhibition Therapy Necessary?” Clin Chem. 2010 May; 56(5):736-9

