

Italy: Robot Prepares Anti-Tumour Drugs

Date: 22 Mar 2011 - 13:10

Source: [ePractice EU](#)

Accurate doses, sterility and safety are the ideal conditions necessary in preparing anti-tumour drugs. At the European Institute of Oncology (IEO) in Milan, the anthropomorphic robot APOTECaChemo which manufactures medications autonomously in a contamination-free setting, seeks to ensure that these conditions are met.

The new IEO-2 Day Centre is the first specialised oncology institution in Italy to house such a robot that is equipped with a mechanical arm. Located in a self-contained chamber, the robot is involved in the preparation of anti-tumour compounds in order to avoid risks posed to both patients and the staff it replaces.

Receiving sterile products is crucial for a cancer patient, as is reducing the risk of contact with carcinogens and harmful agents contained in pharmaceutical compounds for a pharmacist. With APOTECaChemo, an operator avoids exposure to highly hazardous drugs, since that person's task is limited to machine loading and unloading. As a result, the patient is given a sterilised product and perfectly accurate doses as prescribed by a doctor. From intravenous chemotherapy to the 'supportive care' for damage caused by radiation therapy, customised parenteral nutrition or the preparation of innovative experimental therapies, this robotic system supports the clinician through different operational phases..

Emanuela Omodeo Salè, Director of the IEO's Pharmacy, commented: "The preparation of drugs is an important and delicate phase in oncology treatment. The introduction of new biomolecular drugs that act selectively on the diseased cells, and the customised treatment for each patient, make it possible to increase the effectiveness and particularly the tolerability of drugs, but have complicated the preparation. The new robotic system provides a monitored, safe and computerised cycle which ensures an accurate preparation and a drastic reduction of all associated risks."

Pharmacists and technicians interact with the robot - the former send data to the robot via software connected to a network; the latter select through a touchscreen keyboard what is to be loaded onto the robot (solvent, active ingredients and solutions). The robot then recognises the components and manufactures precise doses for them. In addition, the important labelling phase ensures the traceability of a drug and the correct link between the patient and the chosen therapy.

Ms Omodeo Salè added: "The presence of a hospital-based front line pharmacy is a strong added value for the IEO. Our pharmacy is not only limited to the provision and distribution of drugs, but is actively involved in the updating of the internal manual, both for drugs and for medical devices. The laboratories of the Department of Pharmacy, through specific agreements, are also active in the preparation of galenicals for other hospitals."