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Press release

Launch of SATURN, a European research project defining strategies to improve the knowledge about antibiotic selection pressure and judicious antibiotic use

Following the initial remarkable success of antibiotics, the emergence and spread of human pathogenic bacteria resistant to antibiotics has become a major phenomenon in the past fifty years. Antimicrobial Resistance (AMR) is rampant among bacteria that cause healthcare- and community-acquired infections, driving up costs and increasing the difficulty of therapeutic management. To gain a handle on the factors that are propelling the problem of AMR, molecular and patient-level investigations are necessary to better elucidate the time-varying and heterogeneous role of antibiotic selection pressure on emergence and selection of AMR.

The SATURN programme

SATURN (*Impact of Specific Antibiotic Therapies on the prevalence of hUman host ResistaNt bacteria*) will study the impact of antibiotic exposure on antimicrobial resistance (AMR) with a multidisciplinary approach that bridges microbiological, clinical, epidemiological and pharmacological research. SATURN will improve methodological standards and conduct research to better understand the impact of antibiotic use on acquisition, selection and transmission of antibiotic-resistant bacteria (ARB) in different environments, by combining state-of-the-art analyses of molecular, ecologic and individual patient-level data. The proposed program and anticipated results will help reduce the burden of AMR in Europe and guide both clinical decision making and policy decisions in this area.

The proposed research program encompasses patients and clinicians, microbiologists and epidemiologists, pharmacologists and infectious disease specialists, caregivers in inpatient care and outpatient clinics. The SATURN consortium is made of 13 partners from 11 countries which include Switzerland, Italy, Israel, the Netherlands, Belgium, Poland, France, Spain, Germany, Serbia and Romania.

The ambitions of SATURN

The SATURN program will provide a comprehensive knowledge base on the effect of various antibiotic classes, duration of treatment, order of treatment and dosage used on AMR in the community, general hospital wards and in intensive care units. This comprehensive data will be generated at the individual level for both colonised and non-colonised patients and at the ecological (i.e. ward) level.

Moreover, SATURN will provide data on the effects of antibiotics on resistance both at the human host level and at the bacteria level. Combining the results of epidemiological investigations with microbiological and molecular studies on epidemicity, virulence and fitness of strains will provide data for action.

Thus, SATURN results will provide the basis for better treatment decisions regarding antibiotic choices in various settings to minimise AMR, without compromising patient outcomes. This unprecedented approach will allow development of guidelines on antibiotic use and formulary interventions at the local, regional and European level.

For more information:

SATURN website:

www.saturn-project.eu

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