Summer Institute of Advanced Epidemiology & Preventive Medicine

Course on Development and Evaluation of Vaccines: The Case of Enteric Vaccines

July 7th - July 19th (14:00 - 18:30)

Course Coordinators: Dani Cohen (TAU) and Shai Ashkenazi (TAU)

Day	Time	Topic
Sun 7th	14:00-14:45	Course Introduction; Vaccines in historical perspective
	15:00-16:30	Characteristics of the current licensed vaccines (live-attenuated, killed whole cell and subunit); Delivery routes and adjuvants; Target populations for vaccination
	17:00-18:30	Antigens and immune response associated with natural infection and vaccines
Mon 8th	14:00-15:30	The way to licensure; Pre-clinical and early clinical development (phases 1 studies)
	16:00-17:30	Clinical development (phase 2 and 3 studies)
	17:45-18:30	Post-licesure evaluation
Tue 9th	14:00-15:30	New approaches in vaccine development; Antigen discovery: reverse vaccinology genomics, proteomics and glycomics
	16:00-17:30	Immunization in developed and developing countries; Criteria for vaccine development and vaccination policy
	17:45-18:30	Cost-benefit analysis of vaccination
Wed 10th	14:00-14:45	Evaluation of immunization programs; Immunomonitoring
	15:00-16:30	Mathematical modeling to predict impact of vaccination
	17:00-18:30	Compliance to vaccination: The tension between public interest and personal interest in a modern skeptical society
Thu 11th	14:00-15:30	Epidemiology and clinical aspects of enteric infections; pathogenesis, prevention and control.
	16:00-17:30	Classical and novel immunological tests to measure markers of the local and systemic immune response to natural enteric infections and enteric vaccines.
	17:45-18:30	Delivery routes of enteric vaccines and enteric adjuvants
Fri, 12th	08:30-13:00	Work in groups to prepare student's assignments for Wed, July 17th*

*Can also be done before or after classes

Day	Time	Topic
Sun 14th	14:00-15:30	Enteric vaccines development priorities in view of the Global Enterics Multi-Center Study (GEMS) findings
	16:00-17:30	Cholera and typhoid & non-typhi salmonelosis: Rational for vaccine development. Strategies in development of cholera and Salmonella vaccines. Barriers associated with oral vaccination in developing countries.
	17:45-18:30	Cholera and Salmonella Vaccines (cont.); Q&A for all day
Mon 15th	14:00-15:30	Shigellosis: Rational for vaccine development. Strategies in development of Shigella vaccines
	16:00-16:45	Strategies in development of Shigella vaccines (cont.)
	17:00-18:30	Synthetic carbohydrate-protein conjugate vaccine candidates against Shigella; Q&A for all day
Tue 16th	14:00-15:30	Enterotoxigenic E. coli-associated diarrhea: Rational for vaccine development.
	16:00-16:45	Strategies in development of ETEC vaccines (Killed whole cell and subunit vaccines)
	17:00-17:45	Development of live-attenuated ETEC vaccines
	17:45-18:30	Development of combined Shigella-ETEC vaccines; Q&A for all day
Wed 17th	14:00-15:30	Design of two clinical trials, phase 2 and 3, of Shigella candidate vaccines. Different vaccines (live-attenuated or subunit) for the two trials.
	16:00-17:30	Design of two clinical trials, phase 2 and 3, of ETEC candidate vaccines. Different vaccines (live-attenuated or inactivated) for the two trials.
	17:45-18:30	Discussions
Thu 18th	14:00-15:30	Rotavirus gastroenteritis. Rational for vaccine development. Strategies in development of rotavirus vaccines; Results of efficacy studies in developed and developing countries;
	16:00-17:30	Effectiveness of mass vaccination with the current rotavirus vaccines.
	17:45-18:30	Q&A for all day and course wrap up
Fri, 19th	09:00-11:00	**Course Final Exam** (For those who wish to receive academic credit)

Student Evaluation

- Final exam: 70%
- Development and presentation of clinical trial protocols for candidate enteric vaccines: 30%