OPENING SESSION

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The Path to an HIV Vaccine: Follow the Science

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The field of HIV/AIDS pathogenesis is multifaceted, but the early and complex pathogenic events that occur within hours to days following sexual exposure to HIV are of particular importance. They represent a period of vulnerability for the virus, and as such provide a window of opportunity for intervention. These events, from viral penetration and entry, to infection of susceptible target cells, to an amplification of replication and spread of virus to lymphoid tissue and the establishment viral reservoirs, determine the subsequent course of HIV infection. The growing understanding of these events continues to inform the development of new interventions, including strategies for prevention of HIV infection by topical microbicides, pre-exposure prophylaxis (PrEP), post-exposure prophylaxis (PEP), treatment of other sexually transmitted infections, and vaccines, as well as for the early treatment of infection and potentially a cure in certain individuals.

Among other topics, recent data will be presented on $\alpha 4\beta 7$, a receptor for HIV envelope on the surface of CD4+ T cells that, in certain forms, defines a subset of CD4+ T cells that are highly susceptible to productive HIV infection. $\alpha 4\beta 7$ is a cellular protein that guides immune system cells to the gut. In HIV infection, the gut is rapidly depleted of CD4+ T cells, the main target of HIV, triggering the process that ultimately leads to AIDS. An HIV envelope conformation that allows initial binding to $\alpha 4\beta 7$ on mucosal CD4+ T cells should be seriously considered as a target for HIV vaccine development.