Finding Solutions to HIV/AIDs therapies for children

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The majority of the Antiretroviral medications (ARVs) presently in use are developed for adults, with clinical trials on adults, and doses and dosage forms designed for adults. But children cannot be dosed like small adults, as their metabolic capacity to absorb ARVs is not simply proportional to their weight.

Safety, efficacy and dosage need to be determined via specific pediatric trials. Most ARVs were developed in tablet form, yet these are impractical for children under five, who require special liquid formulations. While older children can take tablets, those intended for adults often contain too large a dose.

Many companies are working in voluntary collaborations with each other specifically for the benefit of the developing world through private/public partnerships with local governments and local companies.

As specific contributions from ABPI members to the WHO work on access, the industry has programmes in place to ensure sustainable access to medicines, vaccines and quality healthcare in Africa and elsewhere.

Partnership for Pediatric AIDS Treatment "PEPFAR"

The US President's Emergency Plan for AIDS Relief (PEPFAR) Partnership for Pediatric AIDS Treatment was launched in 2006. This public-private partnership includes innovator and generic pharmaceutical companies and multilateral organizations such as UNAIDS, WHO and UNICEF. The initiative will identify scientific obstacles to treatment for children, take practical steps to address key barriers, share best practices and develop systems for clinical and technical support.

In addition to making medicines available at preferential prices to PEPFAR, **Abbott** is also working with PEPFAR to advance treatment for children with HIV in developing countries by actively participating in the PEPFAR Partnership for Pediatric AIDS Treatment.

Bristol-Myers Squibb is an active partner in the PEPFAR Partnership for Pediatric AIDS Treatment, working to find solutions to issues concerning pediatric HIV treatment, formulations and access. In 2004, Bristol-Myers Squibb agreed to allow the FDA to make right of reference to its confidential dossiers and product registration files to facilitate approval of generic combination products under the PEPFAR program.

Gilead is an active member of the Accelerating Access Initiative together with many of the other companies listed here and several United Nations´ agency working groups, as well as the PEPFAR Partnership for Pediatric AIDS Treatment.

GlaxoSmithKline is a major supplier of ARVs to PEPFAR at not-for-profit prices and has also participated in the State Department's program to expand the number of pediatric formulations for HIV medicines that are appropriate for PEPFAR and other child access programs in the developing world.

Merck & Co., Inc. is an active member of the PEPFAR Partnership for Pediatric AIDS Treatment, working to identify scientific and technical solutions to improving access to antiretroviral treatment for children living with HIV/AIDS in resource-limited settings.

For more information on partnerships between companies please see the IPFMA document "Partnerships – building a healthier society 2009" published on

www.ifpma.org/healthpartnerships

In April 2009 GSK and Pfizer announced a new joint venture for HIV drug development

The focus of the new GSK/Pfizer joint venture is to invest in early stage R&D of innovative HIV treatments and formulations to improve adherence to taking medicines on complicated treatment plans as well as overcoming resistance to the virus. In particular, the new company will increase its research effort into treatments and formulations for children living with HIV.

The new company will also conduct research and development activities specifically to address appropriate access to HIV medicines in developing countries. The new company will continue both GSK and Pfizer's strong records of community support for HIV in addition to their roles in research and development of new drugs.

The new initiatives focus primarily on the care and treatment of children with HIV/AIDS, and will support and continue work by GSK in creating a "Positive Action for Children" Fund which GSK will support with up to £50 million over 10 years. This Fund will be for NGOs and others who work to prevent mother-to-child-transmission and who work with orphans and vulnerable children.

A further £10 million will be made available as seed money to support a new public private partnership approach for Paediatric HIV research. In addition there are new commitments to increase access to HIV medicines in collaboration with other companies, which include developing new fixed-dosed combination treatments for adults and children, and extending GSK's voluntary licensing policy to include abacavir. GSK has also committed to support a number of pediatric clinical trials in resource-poor countries to determine the best ways to expand access to HIV/AIDS treatment.

Current ABPI Members active in HIV/AIDs drug development for use by Children.

GlaxoSmithKline has developed a number of ARV liquid formulations for children, all available at not-for-profit prices in the world's poorest countries. This development was not straightforward and required innovative solutions to overcome the complications of such formulations. For example with development of oral solutions for combination therapies, two of key components require different pH ranges to maintain stability.

Daily dosing issues associated have hampered pediatric formulation of another drug licensed for use in adults.

In 2007, GSK gained marketing authority for new "scored" tablets for three of its medications. This will enable children above 14kg heavy to benefit from a solid dosage form. Scored tablets enable ARVs to be broken into two smaller doses which simplifies treatment for children. Tablets are often easier to store and distribute, and also less complicated to administer than the liquid formulations currently available – particularly when two or three medicines are combined in one pill. For example, a child weighing 20kg can now take half a tablet of one medication in the morning and the second half in the evening in combination with another ARV, instead of requiring 8ml of one liquid medicine twice a day plus 12ml of another liquid three times daily.

The treatment of children has always been integral to **Abbott's HIV** research. Abbott conducted clinical studies of its protease inhibitor (PI) HIV medicines in children at the same time as it studied them for adult use, and both of Abbott's PIs are available around the world in liquid formulations. Abbott's lower-strength tablet formulation of one of its leading drugs is the only co-formulated protease inhibitor tablet that can be used in children. The tablets do not require refrigeration and can be taken with or without a meal. The WHO recommends this drug as the preferred treatment for children who no longer respond to first-line HIV medicine.

Bristol-Myers Squibb currently produces pediatric formulations of three of its adult ARV therapies and is working with the Pediatric Aids Clinical Trials Group to develop a fourth for infants from 3 months old to 18 years. It is also developing an oral solution for children from 3 months to 16 years. The same drug in capsule formulation is currently approved for use in children 3 years and older.

Gilead Sciences is working to advance development of a pediatric formulation of one of its therapies. To address issues with the initial formulation, Gilead has developed a new heat-stable encapsulated sprinkle formulation for future studies. Two Phase III studies in pediatrics are fully enrolled and ongoing.

For more information about what the pharmaceutical industry is doing in the area of access to medicines please download our pdf "Global Health and the Pharmaceutical Industry" from the ABPI website www.abpi.org.uk

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