Overview of recent research papers with a focus on contact investigation and preventive therapy

Childhood Tuberculosis Working Group
24th October 2018

James Seddon
Clinical Senior Lecturer, Imperial College London
Honorary Senior Lecturer, Stellenbosch University
2. Genetic correlations among psychiatric and immune-related phenotypes based on genome-wide association data.
PMID: 30325657

3. Phenotypic Changes on Mycobacterium Tuberculosis-Specific CD4 T Cells as Surrogate Markers for Tuberculosis Treatment Efficacy.
PMID: 30221810

4. Tuberculosis susceptibility and protection in children.
PMID: 30322700

5. Observations on the Ophthalmoscopic Appearances in the Tubercular meningitis of
Childhood Tuberculosis Publications
Observations on the Ophthalmoscopic Appearances in the Tubercular Meningitis of Children.
Garlick G. Med Chr Trans. 1879;62:441-93. No abstract available.
PMID: 20885542 Free PMC Article
Similar articles

Case of Acute Tuberculosis in a Child Aged Four Months.
PMID: 20740338 Free PMC Article
Similar articles

A Tubular View of the Seat of Tubercle in 180 Cases of Tubercle of the Lungs in Children, with Remarks on Pulmonary Phthisis in the Young Subject.
Green PH. Med Chr Trans. 1844;27:351-77. No abstract available.
PMID: 20885804 Free PMC Article
Similar articles

Children's Hospital, Paris: Case of Tubercular Meningitis, with Remarks.
PMID: 21379505 Free PMC Article
Similar articles

Observations on Tubercle of the Brain in Children, with a Tabular View of Thirty Cases of the Affection.
Green PH. Med Chr Trans. 1842;25:192-208. No abstract available.
PMID: 20895745 Free PMC Article
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Dr. Hermis Green on Scrofulous Tubercle of the Brain in Children.
PMID: 21379958 Free PMC Article
Similar articles
My biases

• 924 studies identified on PubMed
• On review of title selected 97 that I thought looked interesting
• Review of abstracts brought down to 36
• Have tried to focus on high impact articles and articles that have looked at contact investigations and preventive therapy
• PLEASE forgive me if I have not included your paper!!!
Vaccines
Prevention of \textit{M. tuberculosis} Infection with H4:IC31 Vaccine or BCG Revaccination


Safety and Immunogenicity of Newborn MVA85A Vaccination and Selective, Delayed Bacille Calmette-Guerin for Infants of Human Immunodeficiency Virus-Infected Mothers: A Phase 2 Randomized, Controlled Trial

Elisa Nemes, Anneke C. Hesselink, Michele Tameris, Katya Mauff, Katrina Downing, Humphrey Mulenga, Penelope Rose, Marieke van der Zalm, Sharon Mbaba, Danelle Van As, Willem A. Hanekom, Gerhard Walzl, Thomas J. Scura, Helen McShane, and Mark Hatherill; for the MVA029 Study Team†
Diagnostics
Urine Tuberculosis Lipoarabinomannan Predicts Mortality in Hospitalized Human Immunodeficiency Virus-Infected Children

Sylvia M. LaCourse,1 Lisa M. Cranmer,5,6 Irene N. Njuguna,2,7 John Gatimu,8 Joshua Stern,3 Elizabeth Maleche-Obimbo,9 Judd L. Watson,1,2,4,9 Dalton Wamalwa,9 Grace C. John-Stewart,1,2,4 and Patricia B. Pavlinac3

Interferon-γ Release Assay Performance for Tuberculosis in Childhood

Alexander W. Kay, MD,9 Shamim M. Islam, MD, DTM&H,9 Kristen Wendorf, MD, MS,9 Janice Westenhouse, MPH,9 Pennan M. Barry, MD, MPH9
Molecular Detection of *Mycobacterium tuberculosis* from Stools in Young Children by Use of a Novel Centrifugation-Free Processing Method

Elisabetta Walters, Lesley Scott, Pamela Nabet, Anne-Marie Demers, Gary Reubenson, Corné Bosch, Anura David, Marieke van der Zalm, Joshua Havumaki, Megan Palmer, Anneke C. Hesseling, Jabulani Ncayiyana, Wendy Stevens, David Alland, Claudia Denkinger, Padmapriya Banada

Xpert MTB/RIF Ultra assay for the diagnosis of pulmonary tuberculosis in children: a multicentre comparative accuracy study

Issa Sabi, Andrea Rachow, Daniel Mapamba, Petra Clowes, Nyanda E. Ntinginya, Mohamed Sasamalo, Lujeko Kamwela, Frederick Haraka, Michael Hoelscher, Daniel H. Paris, Elmar Saathoff, Klaus Reither
Biomarkers for diagnosis of childhood tuberculosis: A systematic review

Toyin Omotayo Togun¹*, Emily MacLean¹, Beate Kampmann²,³, Madhukar Pai¹,⁴

Utility of Point-of-care Ultrasound in Children With Pulmonary Tuberculosis

Sabine Bélard, MD,*†‡§ Charlotte C. Heuvelings, MD,*,† Ebrahim Banderker, FC Rad Diag (SA),¶ Lindy Bateman, MB ChB,* Tom Heller, MD,‖ Savvas Andronikou, PhD,*** Lesley Workman, MPH,* Martin P. Grobusch, FRCP,† and Heather J. Zar, PhD*
C-Tb skin test to diagnose *Mycobacterium tuberculosis* infection in children and HIV-infected adults: A phase 3 trial

Henrik Aggerbeck\(^1\)*, Morten Ruhwald\(^2\), Søren T. Hoff\(^2\), Bettine Borregaard\(^1\), Elizabeth Hellstrom\(^3\), Mookho Malahleha\(^4\), Mirna Siebert\(^6\), Mashra Gani\(^6\), Vincent Seopela\(^7\), Andreas Diacon\(^8\), Madeleine Lourens\(^8\), Peter Andersen\(^2\), Keertan Dheda\(^9\)

Pediatric tuberculosis detection using trained African giant pouched rats

Georgies F Mgone\(^1\), Christophe L Cox\(^2\), Stephen Mwimanzi\(^2\) and Christiaan Mulder\(^2\)
Treatment
Relative bioavailability of bedaquiline tablets suspended in water: Implications for dosing in children

Elin M. Svensson¹,²,⁎, Jeannine du Bois³,⁎, Rene Kitshoff³, Veronique R. de Jager³, Lubbe Wiesner⁴, Jennifer Norman⁴, Sharon Nachman⁵, Betsy Smith⁶, Andreas H. Diacon³,⁷, Anneke C. Hesseling⁸,⁹ and Anthony J. Garcia-Prats⁸,⁹

Off-Label Use of Bedaquiline in Children and Adolescents with Multidrug-Resistant Tuberculosis

Jay Achar, Cathy Hewison, Ana P. Cavalheiro, Alena Skrahina, Junia Cajazeiro, Parpieva Nargiza, Krzysztof Herbaczek, Assliddin S. Rajabov, Jennifer Hughes, Gabriella Ferlazzo, James A. Seddon, Philipp du Cros
Mortality and its determinants in antiretroviral treatment-naive HIV-infected children with suspected tuberculosis: an observational cohort study

Olivier Marcy, Mathurin Tejiokekm, Philippe Msellati, Khanh Truong Huu, Viet Do Chau, Duong Tran Ngoc, Boubacar Nacro, Francis Ateba-Ndongo, Suzie Tetang-Ndiang, Vibol Ung, Bunnet Dim, Leakhena Neou, Laureline Berteloot, Laurence Borand, Christophe Delacourt, Stéphane Blanche, for the ANRS 12229 PAANTHER 01 Study Group

Clinical and Cardiac Safety of Long-term Levofloxacin in Children Treated for Multidrug-resistant Tuberculosis

Anthony J. Garcia-Prats, Heather R. Draper, Heather Finlayson, Jana Winckler, Andre Burger, Barend Fourie, Stephanie Thee, Anneke C. Hesselings, and H. Simon Schaaf

Treatment and outcomes in children with multidrug-resistant tuberculosis: A systematic review and individual patient data meta-analysis

Epidemiology
Mycobacterium tuberculosis transmission from patients with drug-resistant compared to drug-susceptible TB: a systematic review and meta-analysis

Chiori Kodama¹,²,³,¹¹, Berit Lange²,³,¹¹, Ioana D. Olaru⁰, Palwashia Khan¹, Marc Lipman⁵, James A. Seddon⁶, Derek Sloan⁷, Louis Grandjean¹, Rashida Abbas Ferrand⁸,⁹ and Katharina Kranzer¹,¹⁰

High tuberculosis transmission rate in children with nursery exposure to undetected pulmonary tuberculosis

Genotyping and Whole-Genome Sequencing to Identify Tuberculosis Transmission to Pediatric Patients in British Columbia, Canada, 2005–2014

Jennifer L. Guthrie,1 Andy Delli Pizzi,2 David Roth,3 Clare Kong,4 Danielle Jorgensen,4 Mabel Rodrigues,4 Patrick Tang,5 Victoria J. Cook,5 James Johnston,6 and Jennifer L. Gardy1,3

Data-driven model for the assessment of Mycobacterium tuberculosis transmission in evolving demographic structures

Sergio Arregui1,2, Maria José Iglesias3,4, Sofia Samper5,6, Dessislava Marinova7,8, Carlos Martin7,8, Joaquín Sanz9,10, and Yamir Moreno1,2
The incidence of tuberculosis among adolescents and young adults: a global estimate

Kathryn J. Snow, Charalambos Sismanidis, Justin Denholm, Susan M. Sawyer, and Stephen M. Graham

The association between vitamin D status and tuberculosis in children
A meta-analysis

Xiaoyun Gou, Lingli Pan, Fajuan Tang, Hu Gao, Dongqiong Xiao
Contact Tracing and Preventive Therapy
An assessment of the isoniazid preventive therapy programme for children in a busy primary healthcare clinic in Nelson Mandela Bay Health District, Eastern Cape Province, South Africa

F Black,¹ MB ChB, MPhil (Maternal and Child Health); F Amien,² BChD, MChD (Community Dentistry); J Shea,¹ MSc, HPE

Improving childhood tuberculosis detection and treatment through facility-based screening in rural Pakistan

A. A. Malik,*†† F. Amanullah,*† A. J. Codlin,§ S. Siddiqui,⁎ M. Jaswal,⁎ J. F. Ahmed,⁎ S. Saleem,⁎ A. Khurshid,† H. Hussain†
Implementation of tuberculosis prevention for exposed children, Burkina Faso
Giorgia Sulis, Adjima Combary, Haileyesus Getahun, Saidou Gnanou, Pier Francesco Giorgetti, Arnaud Konseimbo, Susanna Capone, Yohhei Hamada, Annabel Baddeley & Alberto Matteelli

Evaluating UK National Guidance for Screening of Children for Tuberculosis
A Prospective Multicenter Study
Beate Kampmann, James A. Seddon, James Paton, Zohreh Nademi, Denis Keane, Bhanu Williams, Amanda Williams, Sue Liebeschutz, Anna Riddell, Jolanta Bematonienė, Sanjay Patel, Nuria Martinez, Paddy McMaster, Robindra Basu-Roy, and Steven B. Welch
Safety and Side Effects of Rifampin versus Isoniazid in Children


A “Stone in the Pond” Approach to Contact Tracing: Responding to a Large-Scale, Nosocomial Tuberculosis Exposure in a Moderate TB-Burden Setting

N. Bagdasarian, MD, MPH,1,2,3 H. C. Chan, BSc,3 S. Ang, BN,4 M. S. Isa, MBBS, MRCPCH,2,4 S. M. Chan, MBBS, FRCPCH, PGDip Paed ID,2,4 D. A. Fisher, MBBS, FRACP1,2
Drop-out from the tuberculosis contact investigation cascade in a routine public health setting in urban Uganda: A prospective, multi-center study

Mari Armstrong-Hough¹,², Patricia Turimumahoro¹, Amanda J. Meyer¹,², Emmanuel Ochom¹, Diana Babirye¹, Irene Ayakaka¹, David Mark¹, Joseph Ggita¹, Adithya Cattamanchi¹,³, David Dowdy¹,⁴, Frank Mugabe⁵, Elizabeth Fair³, Jessica E. Haberer⁶, Achilles Katamba¹,⁷, J. Lucian Davis¹,²,⁸ *

3-month daily rifampicin and isoniazid compared to 6- or 9-month isoniazid for treating latent tuberculosis infection in children and adolescents less than 15 years of age: an updated systematic review

Yibeltal Assefa¹, Yalemzewod Assefa¹, Solomon Woldeyohannes¹, Yohhei Hamada² and Haileyesus Getahun²
Completion Rate and Safety of Tuberculosis Infection Treatment With Shorter Regimens

Andrea T. Cruz, MD, MPH, Jeffrey R. Starke, MD

Impact of nursing interventions on adherence to treatment with antituberculosis drugs in children and young people: A nonrandomized controlled trial

Eva Maria Guix-Comellas¹,* | Librada Rozas-Quesada² | Eneritz Velasco-Arnaiz³,⁴ | Ariadna Ferrés-Canals² | Joan Maria Estrada-Maslorens¹ | Enriqueta Force-Sanmartín¹ | Antoni Noguera-Julian⁴,⁵,⁶,*

Better Completion of Pediatric Latent Tuberculosis Treatment Using 4 Months of Rifampin in a US-based Tuberculosis Clinic

James Gaensbauer, MD, MScPH,*† Kaylynn Aiona, MPH,* Michelle Haas, MD,*† Randall Reves, MD,*† Janine Young, MD,*§¶ and Robert Belnap, MD*†
Potential effect of household contact management on childhood tuberculosis: a mathematical modelling study

Peter J Dodd, Courtney M Yuen, Mercedes C Becerra, Paul Revill, Helen E Jenkins, James A Seddon

Tuberculosis preventive treatment preferences among caregivers of children in Lesotho: a pilot study

Effectiveness of WHO’s pragmatic screening algorithm for child contacts of tuberculosis cases in resource-constrained settings: a prospective cohort study in Uganda

Leonardo Martinez, Ye Shen, Andreas Handel, Srijita Chakraborty, Catherine M Stein, LaShaunda L Malone, W Henry Boom, Frederick D Quinn, Moses L Joloba, Christopher C Whalen*, Sarah Zalwango*
Conclusions

• Many studies evaluating contact tracing and preventive therapy
• Some progress in last 177 years but lots more work needed!!