



VI

CONGRESO LATINOAMERICANO DE BIOQUIMICA CLÍNICA

II

CONGRESO INTERNACIONAL DEL COLEGIO NACIONAL DE BACTERIOLOGÍA



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Cartagena, Colombia 3 al 6 OCTUBRE 2024

Aportes de la Investigación Científica desde el Laboratorio Clínico: Entre la Teoría y la Práctica

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Profesor
Universidad de Antioquia



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- 1. Problemática**
- 2. Pregunta Central**
- 3. Antecedentes**
- 4. Derribando mitos**
- 5. Reflexiones finales**



Research in Clinical Laboratory Science: Professionals' Involvement

REBECCA LAUDICINA, JOANN FENN, VICKIE FREEMAN, CAROL MCCOY,
MARY ANN MCLANE, LILLIAN MUNDT, JOAN POLANCIC,
TIM RANDOLPH, KRISTY SHANAHAN

LEARNING OBJECTIVES

1. Identify CLS practitioners' sources of knowledge of research principles and hands-on research training.
2. List activities that CLS practitioners believe would help improve their research skills.

reported spending between 1 to >40 work hours per week conducting research with 68% of respondents not participating in research activities. Conducting research is an employment requirement for 18% of survey participants. Twenty-nine percent of respondents have published at least one research article, and 47% of respondents who conduct research have published in the journal *Clinical Laboratory Science*. More respondents participate in non-research activities during their employment. CLS practitioners are more likely to participate in research activities than other

PROBLEMÁTICA

Laudicina R, et al (2011). *Clinical Laboratory Science*



OBJETIVO

Describir los aspectos cualitativos y cuantitativos relacionados con el involucramiento en la investigación y otras actividades académicas por profesionales del laboratorio clínico.



HALLAZGOS PRINCIPALES

1. Los profesionales del Laboratorio Clínico **REALIZAN INVESTIGACIONES**, presentan los resultados en eventos académicos y **PUBLICAN SUS ESTUDIOS** en una variedad de revistas de prestigio relacionadas con el campo específico.
2. Los profesionales **DEDICAN UNA PARTE DE SU CARGA LABORAL SEMANAL** a realizar actividades de investigación.
3. Los resultados de la encuesta indican que más del 61% de los participantes han trabajado como miembros de equipos de investigación y casi el 42% han trabajado como investigadores principales o coinvestigadores en al menos un proyecto durante sus carreras profesionales.



HALLAZGOS PRINCIPALES

4. Solo el 18% indicó que la participación o realización de actividades de investigación hace parte de su carga laboral.
5. Los profesionales del laboratorio clínico que realizan investigación lo hacen en diversas áreas que hacen parte del campo de conocimiento del cual se ocupan en su labor profesional y han tenido éxito en la publicación de sus estudios en muchas revistas indexadas.



Principales **OBSTÁCULOS** para realizar actividades de investigación en el Laboratorio Clínico

1. **La investigación NO es una actividad incluida en su carga laboral**
2. **NO hay disponibilidad de tiempo de los profesionales en su rutina cotidiana**
3. **NO hay recursos económicos destinados a la investigación en el Lab Clínico**
4. **Ninguna opción u oportunidad de participar en alguna investigación**





¿ Existe alguna posibilidad para que *nuestros* profesionales del laboratorio clínico puedan realizar investigación en *nuestros* laboratorios clínicos?



¿QUÉ ES UNA INVESTIGACIÓN?

Es el esquema general o marco estratégico que le da unidad, coherencia, secuencia y sentido práctico a todas las actividades que se emprenden para buscar respuesta al problema y unos objetivos planteados para su solución



ESTUDIOS OBSERVACIONALES DESCRIPTIVOS

¿QUÉ ESTUDIAN?

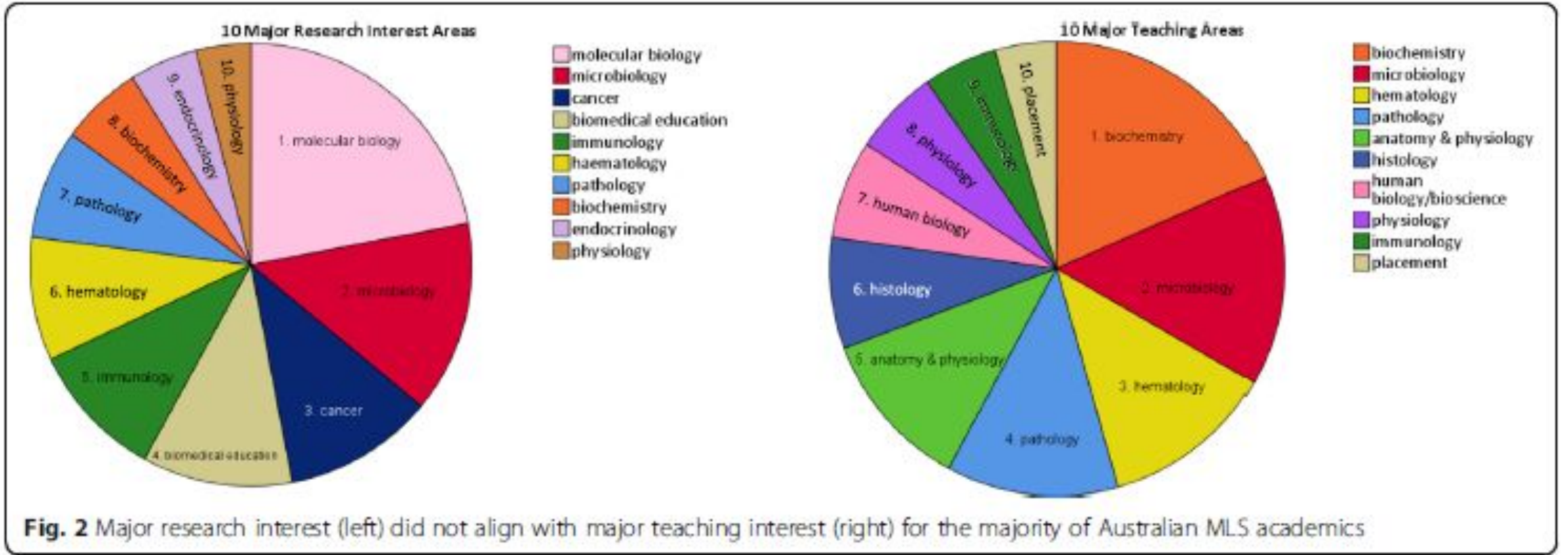
1. Características de la población
2. Magnitud de problemas: prevalencia, incidencia, proporción
3. Factores asociados al problema
4. Condiciones de salud y vida de la población
5. Eventos epidemiológicos, sociológicos, educacionales, administrativos, opiniones sobre temas.



DERRIBANDO MITOS

- 1. Solo se investiga en laboratorios de investigación**
- 2. Solo investiga quien posee un título de posgrado (MSc, PhD)**
- 3. Solo se puede investigar con equipos de alta tecnología y pruebas de última generación**
- 4. No hay revistas indexadas que publiquen investigaciones de datos de laboratorio de asistencia (estudios retrospectivos)**







RESEARCH ARTICLE OPEN ACCESS

Prevalence of Feline Leukemia Virus and Feline Immunodeficiency Virus in Patients from Veterinary Centers in Three Colombian Cities

Ana Sofía Mejía-Villada¹, Maria José Arenas-González¹, Carolina Ríos Usuga², Lina María Rendón Ramos², Ingrid Lorena Jaramillo Delgado² and Jaiberth Antonio Cardona-Arias¹


¹ School of Microbiology, Universidad de Antioquia, Medellín, Antioquia, Colombia

² Grupo de Estudio de Infectología, Zoonosis y Medio Ambiente Laboratorio Testmol (GIZMOL), Testmol SAS, Diagnostic and Research Center, Medellín, Antioquia, Colombia

Frequency: Quarterly

ISSN: 1557-4555 (Print)

ISSN: 1557-4563 (Online)

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ARCHIVES

Abstract

In Colombia, research on Feline Leukemia Virus (FeLV) and Feline Immunodeficiency Virus (FIV) is incipient, despite being the viruses of greatest clinical and epidemiological importance in domestic cats, presenting a worldwide distribution but with very variable prevalence. To determine the molecular prevalence of FeLV and FIV and their associated factors in domestic cats treated in veterinary centers in three Colombian cities. A cross-sectional study with 1,708 felines evaluated for FeLV and 1,646 for FIV by qPCR was performed, following the ethical

1,357

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RESEARCH ARTICLE

Bacterial superinfection in adults with COVID-19 hospitalized in two clinics in Medellín-Colombia, 2020

Juan Carlos Cataño-Correa , Jaiberth Antonio Cardona-Arias  , Jessica Paola Porras Mancilla ,
Marcela Tabares García Published: July 13, 2021 • <https://doi.org/10.1371/journal.pone.0254671>

Article	Authors	Metrics	Comments	Media Coverage
				

Abstract

Introduction

Materials and methods

Result

Discussion

Abstract

COVID-19 represents high morbidity and mortality, its complications and lethality have increased due to bacterial superinfections. We aimed to determine the prevalence of bacterial superinfection in adults with COVID-19, hospitalized in two clinics in Medellín-Colombia during 2020, and its distribution according to sociodemographic and clinical conditions. A cross sectional study was made with 399 patients diagnosed with COVID-19 by RT-PCR. We determined the prevalence of bacterial superinfection and its factors associated with crude and

137

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COVID-19 pandemic





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Impact of COVID-19 Pandemic on Seroprevalence of HIV, HBV, HCV and HTLV I-II in a Blood Bank in Medellín, Colombia, 2019–2022

by Jaiberth Antonio Cardona-Arias ^{1,*} and Luis Felipe Higueta-Gutiérrez ^{1,2}

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Published: 14 February 2023

(This article belongs to the Special Issue Load of HIV, Viral Hepatitis and STIs in the Context of COVID-19 Pandemic)

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Versions Notes



HIV in Three Groups of Young People from Medellín: General Population, Organizations for People with Socioeconomic Vulnerability, and Men Who Have Sex with Other Men

Jaiberth Antonio Cardona-Arias ¹, Nicole Nahomy Narváz Moreno ¹,
Luis Felipe Higueta-Gutiérrez ¹ ²

Affiliations + expand

PMID: 37933247 PMID: PMC10625778 DOI: 10.2147/HIV.S434036

Abstract

Introduction: In Colombia, there are no studies that analyze the effect of socioeconomic vulnerability and belonging to the group of men who have sex with other men (MSM) on the prevalence of HIV in young people.

Objective: To compare the prevalence of HIV in three groups of young people from Medellín-Colombia: general population, socioeconomic vulnerability and MSM.

Methods: This cross-sectional analytical study included 2449 young people from the general population, 1736 from institutions that serve young people in situations of socioeconomic vulnerability, and 2269 MSM. The prevalence of infection in each group was determined, statistical differences were identified using Pearson's Chi-square and Trend's Chi-square, and crude and



Prevalence of HIV, *Treponema pallidum* and Their Coinfection in Men Who Have Sex with Men, Medellín-Colombia

Jaiberth Antonio Cardona-Arias¹, Mauricio Vidales-Silva¹, Alexandra Ocampo-Ramírez¹, Luis Felipe Higueta-Gutiérrez^{1 2}, Juan Carlos Cataño-Correa³

Affiliations + expand

PMID: 38650744 PMID: PMC11034557 DOI: 10.2147/HIV.S452144

Abstract

Introduction: In Colombia, HIV and gestational syphilis are notifiable events; however, they are poorly investigated infections in men who have sex with men (MSM).

Objective: To determine the prevalence of HIV, *Treponema pallidum*, and their co-infection in MSM treated at a Health Services Provider Institution (HSPI) specialized in infectious diseases from Medellín.

Methods: Cross-sectional study with 3454 MSM. Prevalence was determined with its 95% confidence interval; associated factors were identified using Fisher's Exact test, Pearson's Chi-square, and trend Chi-square. Multivariate adjustment was performed using logistic regression. Analyses were performed using SPSS 29.0.

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Conflict of interest statement

Seroprevalence of human T-lymphotropic virus HTLV and its associated factors in donors of a blood bank of Medellín-Colombia, 2014-2018

Jaiberth Antonio Cardona-Arias ¹, Carolina Vélez-Quintero ², Olga Victoria Calle-González ², Jennifer Florez-Duque ³, Juan Carlos Zapata ⁴

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PMID: 31404110 PMID: PMC6690513 DOI: 10.1371/journal.pone.0221060

Abstract

Background: Research on HTLV in Colombia is limited; despite being an endemic country there are few studies on the magnitude of this infection. The aim of this study was to determine the seroprevalence of HTLV I/II and its associated factors in donors to a blood bank of Medellín Colombia, 2014-2018.

Methods: This is a cross-sectional study of 52,159 donors with a secondary information source. Seroprevalence of HTLV I/II was determined with its confidence interval and the population characteristics were described by frequency and summary measures. To explore the associated factors, Pearson's Chi square test, Mann-Whitney U test, crude odds ratios were used and they were adjusted by logistic regression in SPSS 25.0.

Results: 88% of the population lived in the metropolitan area, 68.5% belonged to the University



Infección por *Chlamydia trachomatis* en pacientes de una institución de salud de Bogotá y Medellín, 2012-2015

Jaiberth Antonio Cardona-Arias, Luz Helena Gallego-Atehortúa y Leonardo Alberto Ríos-Osorio

Chlamydia trachomatis infection in patients of a health institution of Bogota and Medellin, 2012-2015

Introduction: *Chlamydia trachomatis* presents clinical consequences and it is barely studied in Colombia. **Objective:** To compare the *C. trachomatis* infection in Bogotá and Medellín with specific frequencies by gender and age group, between 2012-2015. **Methods:** Descriptive study of multiple groups, with 1,660 people in Bogotá and 1,087 in Medellín. Anti-*Chlamydia trachomatis* test with recombinant antigens MOMP, TARP and CPAF was applied; 100% sensitivity and 99.6% specificity. It was estimated and compared the frequency of infection by gender and age group, by hypothesis testing, confidence intervals and prevalence ratios. **Results:** The largest proportion were women and people between 30-39 years. The frequency of positive IgG in Bogotá was 15.6% (95% CI = 13.4 to 17.8) in Medellín 16.9% (95% CI = 13.4 to 20.4), while the frequency of positive IgM was 0% in Medellín and 0.2% (95% CI = 0.01-1.0) in Bogotá; it was higher in women. In Bogotá, the frequency was higher in younger than 30 years and lower in older than 50. **Discussion:** The high frequency of infection, its greater occurrence in women, the differences found in the age groups, the low number of investigations in Colombia and clinical risks associated with *C. trachomatis*, show the need to improve surveillance, screening and research in this infection.

Key words: *Chlamydia trachomatis*; frequency; infection; Colombia.

Palabras clave: *Chlamydia trachomatis*; frecuencia; infección; Colombia.

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PERFIL DE COMORBILIDAD DE PACIENTES HIPERTENSOS DE UNA ESE DEL ÁREA METROPOLITANA DE MEDELLÍN, COLOMBIA 2013

Andrés Rivera-Arango*
Leonardo Alberto Ríos Osorio**
Jaiberth Antonio Cardona-Arias***

Resumen

Introducción. La hipertensión arterial es una enfermedad crónica degenerativa, considerada como un problema de salud pública a nivel mundial.

Objetivo. describir el perfil de comorbilidad de pacientes del programa de HTA de una ESE en el área metropolitana de Medellín, 2013.

Materiales y métodos. Estudio descriptivo de 4827 personas pertenecientes a un programa de control de la HTA. Se calcularon las prevalencias globales de las enfermedades diagnósticas según la Clasificación Internacional de Enfermedades.

Resultados. El 71,2 % fueron mujeres; la edad promedio fue 64 años con rango intercuartil entre 55 y 74 años. Se identificaron 153 comorbilidades, entre las cuales las más frecuentes fueron las metabólicas (17 %)



REFLEXIONES FINALES

- 1. Competencias requeridas del profesional del laboratorio (Pensamiento crítico)**
- 2. Financiación para hacer investigación de calidad**
- 3. Responsabilidad social en el laboratorio clínico**
- 4. Costo – efectividad**
- 5. Investigación basada en la evidencia**
- 6. Ética**
- 7. Alianzas Estratégicas para la generación de conocimiento**



REFLEXIONES FINALES

INTERÉS

**INVESTIGACIÓN EN EL
LABORATORIO DE
ASISTENCIA**

TIEMPO

CAPACITACIÓN



GRACIAS



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