

Annual Report
Division of Pulmonary Diseases
Department of Medicine - Jewish General Hospital
January 1 - December 31, 2016

SUMMARY

The Division of Pulmonary continues to pursue its goals of excellence in clinical care, research and teaching.

Clinical Activities:

The division consists of 10 full time GFT pulmonologists all of whom perform clinical activities in general pulmonary medicine on an outpatient basis. In addition, there are super-specialized, multi-disciplinary clinics in:

- 1) Severe asthma
- 2) COPD
- 3) Interstitial Lung Disease
- 4) Pulmonary Vascular Disease
- 5) Thrombosis
- 6) Tuberculosis
- 7) Pulmonary Oncology
- 8) Cancer Nutrition and Rehabilitation
- 9) Pulmonary Rehabilitation
- 10) Sleep Medicine

These clinical activities take place in the out-patient pulmonary division, The Peter Brojde Lung Cancer Centre, and Mount Sinai Hospital.

In-patient activities center on our extremely busy in-patient consultation service. In addition, a full service respiratory physiology lab continues to provide a full range of pulmonary physiology testing, and the pulmonary procedure lab continues to provide invasive airway and pleural procedures.

1. Research and publications:

The division of Pulmonary Medicine continues to be active in research divided into sub-specialty sections including 1) Airway Center: Encompassing COPD and Asthma. 2) Pulmonary Oncology 3) Interstitial Lung Disease 4) Pulmonary Vascular Disease and 5) Epidemiology.

We currently have an active research program in severe asthma and in one clinical trial of a biologic agent for the treatment of severe asthma we were the largest recruiting center in Canada. In COPD we have an exciting research program looking at individualization of therapy based on inflammatory phenotypes and some of the top COPD researchers in the country will be joining the project within the next year.

In Pulmonary Oncology we continue to offer a wide variety of clinical protocols to all stages of our lung cancer population. We are concentrating on cutting edge targeted and immunologic therapies in this extremely vulnerable patient group.

Our interstitial Lung Disease clinic is looking at anti-fibrotic agents in the treatment of scleroderma ILD.

In pulmonary vascular disease we continue to be involved in clinical trials for pulmonary hypertension patients and have published results for the multi-center ELOPE study looking at long term outcomes post pulmonary embolism.

Dr. Ernst continues to be very productive in pharmaco-epidemiologic studies in a wide variety of diseases.

Select publications include:

--Suisa, S. and **P. Ernst**, The INPULSIS trials of idiopathic pulmonary fibrosis treatment: explaining further discrepancies on exacerbations. *Eur Respir J*, 2016. 47(1): p. 344-5

--Suisa, S., S. Dellaniello, and **P. Ernst**, Long-acting bronchodilator initiation in COPD and the risk of adverse cardio-pulmonary events: A population-based comparative safety study. *Chest*, 2016

--Melosky, B., **Agulnik, J.**, et al., Canadian consensus: inhibition of ALK-positive tumours in advanced non-small-cell lung cancer. *Curr Oncol*, 2016. 23(3): p. 196-200

--Kayaniyil, S., **Cohen, V.**, et al., Treatment patterns and survival in patients with ALK-positive non-small-cell lung cancer: a Canadian retrospective study. *Curr Oncol*, 2016. 23(6): p. e589-e597

--Limoges M, Langleben D, Fox BD, Shear R, Wieczorek P, Rudski LG, **Hirsch AM**, Schlesinger RD, Lesenko L. Pregnancy as a possible trigger for heritable pulmonary arterial hypertension. *Pulm Circ*. 2016 Sep;6(3):381-3.

Drs. Saad, Sakr, Jagoe and Assayag were all awarded the Department of Medicine Clinical Research Award in 2016.

2. Teaching and learning (undergraduate and graduate):

We continue to be very active in clinical teaching with a comprehensive pulmonary elective service for fellows, residents and students. Dr. **Nathalie Saad** continues to be Head of Undergraduate Medical Education for the Department of Medicine.

Drs. Hirsch, Agulnik, Pepe, Sakr, Saad, Jagoe, Assayag all continue to teach on the Internal Medicine CTUs with excellent reviews from the residents and students.

Drs. Agulnik, Pepe, Sakr and Jagoe continue to teach the TCP undergraduate course.

Dr. Ernst teaches epidemiology 1st year medical students lectures and small groups as well as the advanced Pharmaco-epidemiology course.

Dr. Hirsch teaches the 1st year thrombo-embolism lecture.

Dr. Sakr participates in the first year small group respiratory physiology sessions.

Dr. Jagoe teaches a lecture in the Experimental Medicine Graduate course and at the School of Physiotherapy/OT.

Drs. Ernst and Jagoe supervise Msc and PhD students.

Dr. Pepe teaches TCP core lectures, the internal medicine core lecture (academic half-day), and is the respirology elective JGH site supervisor.

3. Involvement in the community:

We continue to be very involved in the community. Under the direction of **Dr. Nathalie Saad**, our pulmonary rehabilitation program run out of Mount Sinai Hospital, (which has now joined our CIUSS) remains extremely active in the community and now includes a specialized group of patients with interstitial lung diseases. All physicians continue to support the community with educational talks to family doctors in multiple topics within respirology. In Pulmonary Oncology we have our annual Zavalkoff lecture which this year was given by Dr. Moishe Liberman

4. Partnerships:

Our Pulmonary Oncology team partners with the Rossy Cancer Network and Dr. Agulnik is a co-leader for the Disease Site Group for lung cancer. The partnership includes research initiatives across McGill hospitals which include our Pulmonary Oncology team.

In order to coordinate the approach to patients with interstitial lung disease, Dr. Assayag established a cohort of patients that may be potentially suitable for novel therapies and works closely with colleagues in Respirology, Rheumatology, Radiology, Thoracic Surgery, and Pathology to provide comprehensive, multi-disciplinary care.. Dr. Assayag collaborates closely with colleagues across Canada and internationally run clinical research programs.

Both Dr. Assayag and Dr. Saad work in partnership with at the MUHC where they conduct out-patient clinics. The thrombosis clinic continues to be a model of inter-disciplinary cooperation with Internal, Medicine, Hematology, Respirology, nursing and research partners across Canada.

5. Milestones: New hires, promotions, and retirements

Dr Assayag officially started her functions as Assistant Professor at McGill University and staff in the Jewish General Hospital Division of Pulmonary Diseases as of January, 2016. Dr. Pierre Ernst was Named Deputy Research Director for Mount Sinai Hospital. Dr. Norman Wolkove retired from his position in December 2016.

6. Honours, awards, and prizes: None to report

7. **Fundraising:** None to report.

SECTION I - DIVISION STATUS UPDATE

1. Mission and objectives of the Division

The mission of the Division of Pulmonary Diseases is to increase accessibility to respiratory services and to provide optimal care to patient suffering from respiratory diseases while maintaining academic excellence in research and teaching.

2. A nominative list of academic staff, their academic rank

Full-time (GFT) members:

Dr. Andrew Hirsch, Chief, Division of Pulmonary Diseases, Associate Professor, McGill University

Dr. Norman Wolkove, Associate Professor, McGill University

Dr. David Small, Associate Professor, McGill University

Dr. Mark Palayew, Assistant Professor, McGill University

Dr. Pierre Ernst, Professor, McGill University

Dr. Jason Agulnik, Assistant Professor, McGill University

Dr. Carmela Pepe, Assistant Professor, McGill University

Dr. Thomas Jagoe, Associate Professor, McGill University

Dr. Lama Sakr, Assistant Professor, McGill University

Dr. Nathalie Saad, Assistant Professor, McGill University

Dr. Deborah Assayag, Assistant Professor, McGill University

SECTION II - GRANTS, PUBLICATIONS, AND SERVICE OUTSIDE OF MCGILL

1. Grants and awards received

Dr. Andrew Hirsch

Investigator Initiated: CanVECTOR (Canadian Venous Thromboembolism Clinical Trials and Outcomes Research) Network

Agency: Canadian Institutes of Health Research (CIHR)

D-dimer testing, tailored to clinical pretest probability, to reduce use of CT pulmonary angiography in suspected pulmonary embolism: A management study. (PE Graduated D-dimer [PEGED] Study)

Agency: Canadian Institutes of Health Research (CIHR)

Apixaban for the Prevention of Venous Thromboembolism in Cancer Patients (AVERT)

Agency: Ottawa Hospital Research Institute and Canadian Institutes of Health Research (CIHR)

Prevalence of Post-Thrombotic Syndrome in Deep-Vein Thrombosis (DVT) Patients Treated With Dabigatran (DABI-PTS)

Agency: Oslo University Hospital

Active Industry sponsored:

DABI-PTS: 2016-present
SAVER Pilot Study: 2016-present
STEP-CAT: 2016-present
HOKUSAI CANCER-VTE: 2016-present
ANDEXANET ANTIDOTE: 2015-present
MARINER: 2015-present
PREDICTORS: 2015-present
RASET: 2015-present
AVERT: 2014-present
RAPS: 2014-present
EINSTEIN CHOICE: 2014-present
EPCAT 2: 2013-present
CATHETER-2: 2013-present
CACTUS-PTS Study: 2012-present
REVERSE Long-term Follow-up: 2003-present
LIBERTY: 2016-present
TRITON: 2015-present
PULMOBIND-02: 2014-present
ARROW: 2014-present
RESPITE: 2013-present
GRIPHON: 2010-present
PATENT-1 and 2 Study: 2009-present

Dr. Pierre Ernst

Canadian Network for Observational Drug Effect Studies (cNODES)

Agency: CIHR

Role: Co-investigator

Statistical Methods in Pharmacoepidemiology and Perinatal Epidemiology

Agency: CIHR (Foundation Scheme)

Role: Co-investigator

Dr. Nathalie Saad

Development of a predictive model of sputum eosinophil in COPD patients

Agencies: Genome Canada, Genome Quebec

Role: Site PI

Clinical Implementation and Outcomes Evaluation of Blood-Based Biomarkers for COPD Management

Agencies: Genome Canada, Genome Quebec

Role: Co-Investigator

Dr. Deborah Assayag

High Oxygen Delivery to Preserve Exercise Capacity in Idiopathic Pulmonary Fibrosis Patients Treated With Nintedanib (HOPE-IPF)

Source of Funding: University of British Columbia

Role: Site PI

Thomas Jagoe

Does the gut microbiome determine response to dietary intervention in cancer cachexia?

Source of Funding: LDI CliPP competition

Role: PI

Using multimodal rehabilitation to improve outcomes for frail patients undergoing resection of colorectal cancer

Source of Funding: Rossy Cancer Network Grant

Role: Co-Investigator

Multimodal exercise, nutrition and anti-inflammatory treatment for palliation of cancer cachexia:

The MENAC study

Source of Funding: CIHR

Role: Co-PI

Dr. Carmela Pepe

LUSTER II: 2016 – present

OSMO: 2016- present

ARIETTA: 2016-present

Dr. Jason Agulnik

Mage-A3-A3+

MLN1117-1501

BO25460

MK3475-3396-809

TSF-CDRB436E2460

D5165C00001

CDRB436E2406

2. Research Trainees

Dr. Pierre Ernst

Tanja Tran	Co-supervisor, PhD in Epidemiology and Biostatistics	2014-
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Christina Qian	Supervisor, MSc Epidemiology and Biostatistics	2014
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Dr. Thomas Jagoe

Tom Zakharov	Supervisor, MSc in Experimental Medicine
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Rima Nasrah	Supervisor, PhD in Experimental Medicine
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Monica Parmar	Thesis committee member, PhD in Nursing
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3. Scholarly works published in the 2016 calendar year:

--Hanna NH, Kaiser R, Sullivan RN, Aren OR, Ahn MJ, Tiangco B, Voccia I, Pawel JV, Kovcin V, **Agulnik J**, Gaschler-Markefski B, Barrueco J, Sikken P, Schloss C, Kim JH; LUME-Lung 2 Study group. Nintedanib plus pemetrexed versus placebo plus pemetrexed in patients with relapsed or refractory, advanced non-small cell lung cancer (LUME-Lung 2): A randomized, double-blind, phase III trial. *Lung Cancer*. 2016 Dec;102:65-73

--Hoffer LJ, Robitaille L, Swinton N, **Agulnik J**, Cohen V, Small D, Pepe C, Eintracht E. Appropriate vitamin D loading regimen for patients with advanced lung cancer. *Nutr J*. 15:84 DOI: 10.1186/s12937-016-0203-8 URL: <http://www.nutritionj.com/content/15/1/84> (Oct 6, 2016)

--Melosky B, **Agulnik J**, Albadine R, Banerji S, Bebb DG, Bethune D, Blais N, Butts C, Cheema P, Cheung P, Cohen V, Deschenes J, Ionescu DN, Juergens R, Kamel-Reid S, Laurie SA, Liu G, Morzycki W, Tsao MS, Xu Z, Hirsh V. Canadian consensus: inhibition of ALK-positive tumours in advanced non-small-cell lung cancer. *Curr Oncol*. 2016 Jun;23(3):196-200

--Ryerson CJ, Camp PG, Eves ND, Schaeffer M, Syed N, Dhillon S, Jensen D, Maltais F, O'Donnell DE, Raghavan N, Roman M, Stickland MK, **Assayag D**, Bourbeau J, Dion G, Fell CD, Hambly N, Johannson KA, Kalluri M, Khalil N, Kolb M, Manganas H, Morán-Mendoza O, Provencher S, Ramesh W, Rolf JD, Wilcox PG, Guenette JA. High Oxygen Delivery to Preserve Exercise Capacity in Patients with Idiopathic Pulmonary Fibrosis Treated with Nintedanib. Methodology of the HOPE-IPF Study. *Ann Am Thorac Soc*. 2016 Sep;13(9):1640-7. doi: 10.1513/AnnalsATS.201604-267OC. PubMed PMID: 27348402.

--Johannson KA, Elicker BM, Vittinghoff E, **Assayag D**, de Boer K, Golden JA, Jones KD, King TE Jr, Koth LL, Lee JS, Ley B, Wolters PJ, Collard HR. A diagnostic model for chronic hypersensitivity pneumonitis. *Thorax*. 2016 Oct;71(10):951-4. doi: 10.1136/thoraxjnl-2016-208286. Epub 2016 May 31. PubMed PMID: 27245779; PubMed Central PMCID: PMC5530732.

--Suisse S, **Ernst P**. The INPULSIS trials of idiopathic pulmonary fibrosis treatment: explaining further discrepancies on exacerbations. *Eur Respir J*. 2016 Jan;47(1):344-5. PMID: 26721966

--Azoulay L, Filion KB, Platt RW, Dahl M, Dormuth CR, Clemens KK, Durand M, Juurlink DN, Targownik LE, Turin TC, Paterson JM, **Ernst P**; Canadian Network for Observational Drug Effect Studies (CNODES) Investigators. Incretin based drugs and the risk of pancreatic cancer: international multicentre cohort study. *BMJ*. 2016 Feb 17;352:i581. PMID: 26888382

--Filion KB, Eberg M, **Ernst P**. Confounding by drug formulary restriction in pharmacoepidemiologic research. *Pharmacoepidemiol Drug Saf*. 2016 Mar;25(3):278-86. PMID:26648236

--Filion KB, Azoulay L, Platt RW, Dahl M, Dormuth CR, Clemens KK, Hu N, Paterson JM, Targownik L, Turin TC, Udell JA, **Ernst P**; CNODES Investigators. A Multicenter Observational Study of Incretin-based Drugs and Heart Failure. *N Engl J Med*. 2016 Mar 24;374(12):1145-54. PMID: 27007958

--Renoux C, Dell'Aniello S, Khairy P, Marras C, Bugden S, Turin TC, Blais L, Tamim H, Evans

C, Steele R, Dormuth C, **Ernst P**; Canadian Network for Observational Drug Effect Studies (CNODES) Investigators. Ventricular tachyarrhythmia and sudden cardiac death with domperidone use in Parkinson's Disease. *Br J Clin Pharmacol*. 2016 Aug;82(2):461-72. PMID: 27062307

--Vutcovici M, Bitton A, **Ernst P**, Kezouh A, Suissa S, Brassard P. Inflammatory bowel disease and risk of mortality in COPD. *Eur Respir J*. 2016 May;47(5):1357-64. PMID: 26869671

--Ducharme FM, Lamontagne AJ, Blais L, Grad R, Lavoie KL, Bacon SL, McKinney ML, Desplats E, **Ernst P**. Enablers of Physician Prescription of a Long-Term Asthma Controller in Patients with Persistent Asthma. *Can Respir J*. 2016; Epub 2016 Jun 15. PMID: 27445537

--Azoulay L, Filion KB, Platt RW, Dahl M, Dormuth CR, Clemens KK, Durand M, Hu N, Juurlink DN, Paterson JM, Targownik LE, Turin TC, **Ernst P**; and the Canadian Network for Observational Drug Effect Studies (CNODES) Investigators., Suissa S, Dormuth CR, Hemmelgarn BR, Teare GF, Caetano P, Chateau D, Henry DA, Paterson JM, LeLorier J, Levy AR, **Ernst P**, Platt RW, Sketris IS. Association Between Incretin-Based Drugs and the Risk of Acute Pancreatitis. *JAMA Intern Med*. 2016 Oct 1;176(10):1464-1473. PMID: 27479930

--Ahmed S, **Ernst P**, Bartlett SJ, Valois MF, Zaihra T, Paré G, Grad R, Eilayyan O, Perreault R, Tamblyn R. The Effectiveness of Web-Based Asthma Self-Management System, My Asthma Portal (MAP): A Pilot Randomized Controlled Trial. *J Med Internet Res*. 2016 Dec 1;18(12):e313. PMID: 27908846

--Leung Wai Sang S, Morin JF, **Hirsch A**. Operative and Functional Outcome After Pulmonary Endarterectomy for Advanced Thromboembolic Pulmonary Hypertension. *J Card Surg*. 2016 Jan;31(1):3-8. doi: 10.1111/jocs.12646.

--Ma K, Wells P, Guzman C, Anderson D, Blostein M, **Hirsch A**, Lazo-Langner A, Kovacs MJ, Rodger M, Tagalakakis V, Kahn SR. A multicenter prospective study of risk factors and treatment of unusual site thrombosis. *Thromb Res*. 2016 Aug;144:100-5. doi: 10.1016/j.thromres.2016.04.014.

--Limoges M, Langleben D, Fox BD, Shear R, Wiecezorek P, Rudski LG, **Hirsch AM**, Schlesinger RD, Lesenko L. Pregnancy as a possible trigger for heritable pulmonary arterial hypertension. *Pulm Circ*. 2016 Sep;6(3):381-3.

--Spendiff S, Vuda M, Gouspillou G, Sudhakar A, Perez A, Morais JA, **Jagoe RT**, Filion M-E, Glicksman R, Kapchinsky S, MacMillan N, Pion CH, Aubertin-Leheudre M, Hettwer S, Correa JA, Taivassalo T, Hepple RT. Denervation drives mitochondrial dysfunction in skeletal muscle of octogenarians. *J Physiol* 594, 7361-7379, DOI 10.1113/JP272487 2016

--Konokhova Y, Spendiff S, **Jagoe RT**, Aare S, Kapchinsky S, MacMillan N, Rozakis P, Picard M, Aubertin-Leheudre M, Pion CH, Bourbeau J, Hepple RT, Taivassalo T. Failed upregulation of TFAM protein and mitochondrial DNA in oxidatively deficient fibres of chronic obstructive pulmonary disease locomotor muscle. *Skeletal Muscle* 6:10 DOI 10.1186/s13395-016-0083-9, 18 Feb 2016

--Giles K, Guan C, **Jagoe TR**, Mazurak V. Diet composition as a source of variation in experimental animal models of cancer cachexia. *J Cachexia Sarcopenia Muscle*. 2016 May;7(2):110-25. doi: 10.1002/jcsm.12058. Epub 2015 Oct 15. Review. PubMed PMID: 27493865; PubMed Central PMCID: PMC4863732.

4. Academic and community engagement service outside of McGill by individual members of the unit

Dr. Andrew Hirsch

-PHA Canada medical advisory board

Dr. Pierre Ernst

- Reviewer, CIHR Project Grant: Fall 2016 competition

- Medical expert, Régie de l'assurance automobile du Québec.

Dr. Carmela Pepe

-Royal College examiner

Nathalie Saad

- Member, Agence de Santé et des services sociaux de Montréal; Implementation Committee, screening and chronic management of COPD in primary care program: integrated care model

- Medecin Expert, Ministère de la Santé et des services sociaux bureau de Montréal;

Implementation Committee, screening and chronic management of COPD in primary care program: integrated care model

- Treasurer - secretary (elected), Association des pneumologues de la province de Québec

- McGill representative for the Association des pneumologues de la province de Québec

- External Expert, Canadian Agency for Drugs and Technologies in Health

Submitted by:

Andrew Hirsch MD

Chief Division of Pulmonary,

Department of Medicine,

Jewish General Hospital