

# Curriculum vitae: Ian Robert Wanless

Revised March 28, 2020 (See last 2 sections for brief summaries)

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## Biographical information

Birth: July 31, 1945, Sarnia, Ontario, Canada

Citizenship: Canadian

Spouse: Eve Ann Roberts, MA, MD, PhD, FRCPC, FAASLD

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## Education/ degrees/ diplomas

1967 B.Sc. (Honours biochemistry), McGill University

1971 M.D.,C.M., McGill University

1971-2 Rotating Internship, Royal Alexandra Hospital, Edmonton, Alberta

1972 Licentiate of the Medical Council of Canada

1972-3 Resident, Internal Medicine, University of Alberta Hospital, Edmonton

1973-4 Resident, Anatomical Pathology, University of Alberta Hospital

1974 General License, College of Physicians and Surgeons of Ontario

1974-8 Resident, Anatomical and Clinical Pathology, Cornell University Medical College, New York

1977 Fellow, Royal College of Physicians and Surgeons of Canada, General Pathology

1978 Diplomate, American Board of Pathology, Anatomical and Clinical Pathology

1978- Member, Canadian Medical Protective Association

2006- Full license with specialty registration in General Pathology with the College of Physicians and Surgeons of Nova Scotia.

## Employment

2006- Professor, Department of Pathology, Dalhousie University, Halifax, Canada  
 2006- Staff Pathologist, Queen Elizabeth II Health Sciences Centre, Victoria Site, Halifax, Canada  
 1996-06 Professor, Department of Pathology, University of Toronto (renamed Department of Laboratory Medicine and Pathobiology 1997)  
 1987-96 Associate Professor, Department of Pathology, University of Toronto  
 1980-87 Assistant Professor, Department of Pathology, University of Toronto  
 1978-80 Lecturer, Department of Pathology, University of Toronto  
 1995-98 Consultant Pathologist, Princess Margaret Hospital (until PMH merged with TGH, 1998)  
 1990-95 Director, Canadian Liver Pathology Reference Centre  
 1990-06 Staff Pathologist, Toronto General Hospital, Toronto (Renamed University Health Network ca. 2000)  
 (1990-92 - Head or co-head of Autopsy Service)  
 1985-90 Secretary, Canadian Liver Pathology Reference Centre  
 1990-05 Consultant Pathologist, Hospital for Sick Children  
 1980-92 Consultant Pathologist, Clinical Institute of Addiction Research Foundation  
 1978-90 Staff Pathologist, Toronto Western Hospital, Toronto

## Honours

Selection of paper (#16) for Yearbook of Pathology and Clinical Pathology, 1986  
 Selection of paper (#18) for Yearbook of Digestive Diseases, 1986  
 Selection of paper (#20) for Yearbook of Digestive Diseases, 1986  
 Selection of paper (#25) for editorial review in Hepatology, 1989.  
 Selection of paper (#30) for Gastroenterology Digest, 1990.  
 Selection of paper (#33) for Yearbook of Digestive Diseases, 1992  
 Member, Environmental Liver Panel, Armed Forces Institute of Pathology, 1993-95  
 Chair, International Working Party of World Congresses of Gastroenterology for the Nomenclature of Hepatocellular Nodules, 1994-5.  
 President Hans Popper Hepatopathology Society, 2002-4  
 Queen's Jubilee Medal, 2003  
 Member International Liver Study Group (Gnomes), 2004-  
 Gold Medal, Canadian Liver Foundation, 2005  
 Hans Popper Hepatopathology Society Lifetime Achievement Award, 2020

## Professional affiliations and activities

American Association for the Study of Liver Disease, member  
 Canadian Association for the Study of the Liver, member (and Councilor and chair of membership committee 1990-92).  
 International Academy of Pathology (US-Can Academy of Pathology), member, to 2011  
 Hans Popper Hepatopathology Society, charter member, president 2002-2004  
 The Laennec Liver Pathology Society, 1997-, founding president (secretary from 2006)  
 International Liver Study Group (Gnomes), 2004-, member

## Reviewer for journals

Am J Gastroenterology, Am J Pathol, Arch Pathol Lab Med, Bone Marrow Transplantation, Cancer, Cancer Research, Can J Gastroenterol, Cardiovascular Pathology, Comparative Hepatology, Dig Dis Sci, Exp Mol Pathol, Gastroenterology, Gut, Hepatology, Hepatology Research, Hepatology International, Histopathology, J Hepatology, J Gastroenterology and Hepatology, J Histochem Cytochem, J Rheumatology, Liver, Liver

International, Liver Transpl Surg, The Medical Letter, N Engl J Med, Obesity Res, Proc Nat Acad Sciences (USA), Tumor Biology, Virchows Archives (This list not current)

#### Editorial boards:

Hepatology International, Journal of Clinical and Experimental Hepatology, Liver International, Surgical and Experimental Pathology (This list not current)

#### Committees

Postgraduate Education Committee, Department of Pathology, U. of T (1984-1990)  
 Continuing Medical Education Committee, Department of Pathology, U. of T. (1986-8)  
 Medical Education Committee, TWH (1987-88)  
 Faculty Council, Faculty of Medicine, representative for Pathology, (1989-93)  
 Canadian Liver Foundation, Medical Advisory Board Executive Committee (1990-1995)  
 Canadian Association for Study of the Liver, Councillor (1990-) and chairman of membership committee (1991-1995)  
 Environmental Liver Panel, Armed Forces Institute of Pathology, member  
 Nomenclature Committee for World Congress of Gastroenterology, chair for terminology of nodular lesions, 1993-94  
 Nomenclature Committee for World Congress of Gastroenterology, panel member for terminology of chronic hepatitis (1993-94)  
 Abstract Selection Committee, American Assoc. for the Study of Liver Diseases (1994)  
 Editorial Committee, Liver Letter (1994-96)  
 Secretary-Treasurer, The Toronto Hospital Pathology Associates (1994-5)  
 Chair, The Toronto Hospital Pathology Associates (1995-6)  
 Steering Committee, Canadian Viral Hepatitis Network (2000-2)  
 Appointments and Promotions Committee, Dalhousie, 2007- 2011 (chair 2008-2011)  
 Pathology-Immunology-Microbiology Unit, Pathology Component Chair, Dalhousie, 2009-2010  
 Med I-II curriculum committee, Dalhousie, 2009-2010

## Refereed Publications

1. Fensom DS, Wanless IR. Further studies of electro-osmosis in *Nitella* in relation to pores in membranes. *J Exptl Bot* 1967;18:563-577.
2. Wanless IR, Bryniak N, Fensom DS. The effect of some growth- regulating compounds upon electro-osmotic measurements, transcellular water flow and Na, K, and Cl influx in *Nitella flexilis*. *Can J Bot* 1973;51:1055-1070.
3. Wanless IR, Mielke B, et al. Mesothelioma of the AV-node with longstanding complete heart block. Report of a case. *Am J Clin Pathol* 1975;63:377-383.
4. Wanless IR, Gledhill RW. Failure to produce hepatic hyperplastic nodules in rats by portacaval anastomosis and testosterone. *Nature* 1979;277:327-328.
5. Wanless IR, Godwin TA, Allen F, Feder A. Nodular regenerative hyperplasia of the liver in hematologic disorders: A possible response to obliterative portal venopathy. *Medicine (Baltimore)* 1980;59:367-379.
6. Wanless IR, Solt L, Kortan P, Deck JHN, Gardiner GW, Prokipchuk EJ. Nodular regenerative hyperplasia of the liver associated with macroglobulinemia: A clue to the pathogenesis. *Am J Med* 1981;70:1203-1209.
7. Orrego H, Israel Y, Crossley IR, Mahmoud AAF, Peters PA, Varghese G, Wanless IR. Effect of chronic alcohol intake on hepatic fibrosis and granulomas in murine schistosomiasis mansoni. *Hepatology* 1981;1:416-418.
8. Wanless IR, Medline A. The role of estrogens as promoters of hepatic neoplasia. *Lab Invest* 1982;46:313-320.
9. Wanless IR, Bernier V, Seger M. Intrahepatic portal sclerosis in patients without history of liver disease: An autopsy study. *Am J Pathol* 1982;106: 63-70.
10. Thorne C, Urowitz M, Wanless IR, Roberts E, Blendis L. Liver disease in Felty's syndrome. *Am J Med* 1982;73:35-40.
11. Whittaker SJ, Amar JN, Wanless IR, Heathcote J. Sulindac hepatotoxicity. *Gut* 1982;23:875-877.
12. Wanless IR, Bernier V. Fibrous thickening of the splenic capsule. A response to chronic splenic congestion. *Arch Pathol Lab Med* 1983;107:595-599.
13. Wanless IR. The cellular distribution of vitamin A in the liver. *Liver* 1983;3:403-409.
14. Wanless IR. The effect of dietary cholesterol on platelet survival in the rabbit. A study using <sup>14</sup>C-serotonin and <sup>51</sup>Chromium double-labelled platelets. *Thromb Haemost* 1984;52:85-89.
15. Reynolds J, Wanless IR. Nodular regenerative hyperplasia of the liver in a patient with rheumatoid arteritis. *J Rheumatol* 1984;11: 838-842.
16. Roberts EA, Cox DW, Medline A, Wanless IR. Occurrence of alpha-1-anti-trypsin deficiency in 155 patients with alcoholic liver disease. *Am J Clin Pathol* 1984;82:424-427.
17. Mitwalli A, Rodella H, Brandes L, Wanless I, Wu G, Ogilvie R, Schilling H, Dobbie JW, Wilson LS, Oreopoulos DG. Is fat absorbed through the peritoneum? *Perit Dial Bull* 1985;5:165-168.
18. Wanless IR, Lentz JS, Roberts EA. Partial nodular transformation of the liver in an adult with persistent ductus venosus. A review with hypothesis on the pathogenesis. *Arch Pathol Lab Med* 1985;109:427-432.
19. Wanless IR, Geddie WR. Lipogranulomata in liver and spleen: An autopsy series. *Arch Pathol Lab Med* 1985;109:283-286.

20. Wanless IR, Mawdsley C, Adams R. On the pathogenesis of focal nodular hyperplasia of the liver. *Hepatology* 1985;5:1194-1200.
21. Wanless IR, Gryfe A. Nodular transformation of the liver in hereditary hemorrhagic telangiectasia. *Arch Pathol Lab Med* 1986;110: 331-335.
22. Grupp LA, Perlanski E, Wanless IR, Stewart RB. Voluntary alcohol intake in the hypertension prone Dahl rat. *Pharmacol Biochem Behav* 1986;24:1167-1174.
23. Singer P, Wanless I, Silver H, Keating A. Pulmonary tumor emboli, microangiopathic hemolytic anemia and dyspnea in disseminated cancer. *The Cancer Journal* 1986;1:76-78.
24. Wanless IR, Zahradnik J, Heathcote EJ. Hepatic cysts of periductal gland origin presenting as obstructive jaundice. *Gastroenterology* 1987;93:894-898.
25. Kim YI, Heathcote J, Wanless IR. The hepatitis B carrier state - a followup study of 100 consecutive cases. *Clin Invest Med* 1987;10:383-387.
26. Wanless IR, Bargman J, Oreopoulos D, Vas S. Subcapsular steatonecrosis of the liver in response to peritoneal insulin delivery: A clue to the pathogenesis of steatonecrosis in obesity. *Modern Pathology* 1989;2:69-74.
27. Wanless IR: Coexistent pulmonary and portal hypertension: Yin and Yang. (editorial). *Hepatology* 1989;10:255-257.
28. Wanless IR, Albrecht S, Bilbao J, Frei JV, Heathcote EJ, Roberts EA, Chiasson D. Multiple focal nodular hyperplasia of the liver associated with vascular malformations of various organs and neoplasia of the brain: a new syndrome. *Modern Pathology* 1989;2:456-462.
29. Wanless IR, Dore S, Gopinath N, Tan J, Cameron R, Heathcote EJ, Blendis LM, Levy G. Histopathology of cocaine hepatotoxicity: report of four patients. *Gastroenterology* 1990;98:497-501.
30. Flowers MA, Heathcote EJ, Wanless IR, Sherman M, Reynolds WJ, Cameron RG, Levy GA, Inman RD. Fulminant hepatitis as a consequence of reactivation of hepatitis B virus infection after discontinuation of low-dose methotrexate therapy. *Ann Intern Med* 1990;112:381-382.
31. Wanless IR. Micronodular transformation (nodular regenerative hyperplasia) of the liver: a report of 64 cases among 2500 autopsies and a new classification of benign hepatocellular nodules. *Hepatology* 1990;11:787-797.
32. Witt-Sullivan H, Heathcote J, Cauch K, Blendis L, Ghent C, Katz A, Milner R, Pappas RC, Rankin J, Wanless IR. The demography of primary biliary cirrhosis in Ontario, Canada. *Hepatology* 1990;12:98-105.
33. Wanless IR, Lentz JS. Fatty liver hepatitis (steatohepatitis) and obesity: An autopsy study with analysis of risk factors. *Hepatology* 1990;12:1106-1110.
34. Wanless IR, Peterson P, Das A, Boitnott JK, Moore GW, Bernier V. Hepatic vascular disease and portal hypertension in polycythemia vera and agnogenic myeloid metaplasia: a clinico-pathological study of 145 patients examined at autopsy. *Hepatology* 1990;12:1166-1174.
35. Phillips MJ, Cameron R, Flowers MA, Blendis LM, Greig PD, Wanless I, Sherman M, Superina R, Langer B, Levy GA. Post-transplant recurrent hepatitis B viral liver disease. *Am J Pathol* 1992;140:1295-1308.
36. Liu G, Butany J, Wanless IR, Cameron R, Greig P. The vascular pathology of human hepatic allografts. *Hum Pathol* 1993;24:182-188.
37. Donaldson BW, Gopinath R, Wanless IR, Phillips MJ, Cameron R, Roberts EA, Greig PD, Levy G, Blendis LM. The role of transjugular liver biopsy in fulminant liver failure - relation to other prognostic indicators. *Hepatology* 1993;18:1370-1374.

38. Michieletti P, Wanless IR, Katz A, Scheuer PJ, Yeaman SJ, Bassendine MF, Palmer JM, Heathcote EJ. Antimitochondrial antibody negative primary biliary cirrhosis: a distinct syndrome of autoimmune cholangitis. *Gut* 1994;35:260-265.
39. Heathcote EJJ, Cauch K, Walker V, Bailey RJ, Blendis LM, Ghent CN, Minuk GY, Pappas SC, Scully L, Steinbrecher UP, Sutherland L, Williams CN, Worobetz L, Milner RA, Wanless IR, Witt-Sullivan H. The Canadian multi-center double blind randomized controlled trial of ursodeoxycholic acid in primary biliary cirrhosis. *Hepatology* 1994;19:1149-1156.
40. Altraif I, Lilly L, Wanless IR, Heathcote EJ. Cholestatic liver disease with ductopenia (vanishing bile duct syndrome) following clindamycin and trimethoprim-sulfamethoxazole administration. *Am J Gastroenterology* 1994;89:1230-1234.
41. Woolf GM, Petrovic LM, Rojter SE, Wainwright S, Villamil FG, Katkov WN, Michieletti P, Wanless IR, Stermitz FR, Beck JJ, Vierling JM. Acute hepatitis associated with the Chinese herbal product Jin Bu Huan. *Ann Intern Med* 1994; 121:729-735.
42. Sadowski D, Lee SS, Wanless IR, Kelly JK, Heathcote EJ. Progressive type of focal nodular hyperplasia characterized by multiple tumors and recurrence. *Hepatology* 1995;21:970-975.
43. Wong DKH, Colina Y, Naylor CD, Chen E, Sherman M, Vas S, Wanless IR, Read S, Li H, Heathcote EJ. Interferon alfa treatment of chronic hepatitis B: Randomized trial in a predominantly homosexual male population. *Gastroenterology* 1995;108:165-171.
44. Wanless IR, Wong F, Blendis LM, Greig P, Heathcote EJ, Levy G. Hepatic and portal vein thrombosis in cirrhosis: possible role in development of parenchymal extinction and portal hypertension. *Hepatology* 1995;21:1238-1247.
45. Wanless IR, Liu J, Butany J. Role of thrombosis in the pathogenesis of congestive hepatic fibrosis (cardiac cirrhosis). *Hepatology* 1995;21:1232-1237.
46. Batchelor WB, Heathcote J, Wanless IR. Chaparral-induced hepatic injury. *Am J Gastroenterol* 1995;90:831-833.
47. Heathcote EJ, Wanless IR. Hepatotoxicity: Newer aspects of pathogenesis and treatment. *The Gastroenterologist* 1995;3:119-129.
48. Wanless IR, et al. (International Working Party of World Congresses of Gastroenterology). Terminology of Nodular Lesions of the Liver. *Hepatology* 1995;22:983-993.
49. Battaglia DM, Wanless IR, Brady AP, Mackenzie RL. Intrahepatic sequestered segment of liver presenting as focal fatty change. *Am J Gastroenterology* 1995;90:238-239.
50. Wanless IR, Aljumah AA, Sherman M, Wilson S, Langer B, Saito A. Lipiodol accumulation in hepatic hemangioma. *Am J Surg Pathol* 1996;20:480-482.
51. Cattral MS, Krajden M, Wanless IR, Rezig M, Cameron R, Greig PD, Chung SW, Levy GA. A pilot study of ribavirin therapy for hepatitis C virus infection after liver transplantation. *Transplantation* 1996;61:1483-8.
52. Redston MS, Wanless IR. The hepatic von Meyenburg complex: Prevalence and association with hepatic and renal cysts among 2843 autopsies. *Modern Pathology* 1996;9:233-237.
53. Muradali D, Wilson S, Wanless IR, Greig, PD, Cattral M, Cameron RG, Levy GA. Peliosis hepatis with intrahepatic calcifications. *J Ultrasound Med* 1996;15:257-260
54. Soares M, Wanless IR, Cameron R, Ambus U. Entero-portal fistula secondary to penetrating duodenal peptic ulcer. *Am J Gastroenterol* 1996;91:1462-1463.

55. Wanless IR. Nodular regenerative hyperplasia, dysplasia, and hepatocellular carcinoma (editorial). *Am J Gastroenterol* 1996;91:836-837.
56. Wanless IR, Belgioirno J, Huet PM. Hepatic sinusoidal fibrosis induced by cholesterol and stilbestrol in the rabbit: 1. Morphology and inhibition of fibrogenesis by dipyridamole. *Hepatology* 1996;24:855-864.
57. Mastai R, Laganière S, Wanless IR, Giroux L, Rocheleau B, Huet PM. Hepatic sinusoidal fibrosis induced by cholesterol and stilbestrol in the rabbit. 2. Hemodynamic and drug disposition studies. *Hepatology* 1996;24:865-870.
58. Aljumah AA, Cattral MS, Greig PD, Wanless IR, Krajden M, Hemming AW, Lilly LB, Levy GA. Longterm ribavirin therapy for recurrent hepatitis C after liver transplantation. *Transplant Proc* 1997;29:514.
59. Shimamatsu K, Wanless IR. Role of ischemia in causing apoptosis, atrophy, and nodular hyperplasia in human liver. *Hepatology* 1997;26:343-350.
60. Chung SW, Greig PD, Cattral MS, Taylor BR, Sheiner PA, Wanless IR, Cameron R, et al. Evaluation of liver transplantation for high-risk indications. *Br J Surg* 1997;84:189-95.
61. Moreno-Merlo F, Wanless IR, Shimamatsu K, Sherman M, Greig P, Chiasson D. The role of granulomatous phlebitis and thrombosis in the pathogenesis of cirrhosis and portal hypertension in sarcoidosis. *Hepatology* 1997;26:554-560.
62. Philosophe B, Greig PD, Hemming AW, Cattral MS, Wanless I, Rasul I, Baxter N, et al. Surgical management of hepatocellular carcinoma: resection or transplantation? *J Gastrointest Surg* 1998;2:21-7.
63. Tanaka M, Wanless IR. Pathology of the liver in Budd-Chiari syndrome: portal vein thrombosis and the histogenesis of veno-centric cirrhosis, veno-portal cirrhosis, and large regenerative nodules. *Hepatology* 1998;27:488-496.
64. McEntee M, Wright K, Wanless IR, DeNovo R, Shull R. Non-cirrhotic portal hypertension and nodular regenerative hyperplasia of the liver in dogs with mucopolysaccharidosis I (MPS-I). *Hepatology* 1998, 28:385-90.
65. Hyman A, Yim C, Krajden M et al. Oral Prostaglandin (PGE2) Therapy for Chronic Viral Hepatitis B and C. *J Viral Hepat.* 1999;6:329-336. (C)
66. Springer J, Cauch-Dudek K, O'Rourke K, Wanless, I R, Heathcote EJ. Asymptomatic primary biliary cirrhosis: a study of its natural history and prognosis. *Am J Gastroenterol* 1999;94:47-53. (C)
67. Cattral MS, Hemming AW, Wanless IR, Al Ashgar H, Krajden M, Lilly L, et al. Outcome of long-term ribavirin therapy for recurrent hepatitis C after liver transplantation. *Transplantation* 1999;67(9):1277-80. (C)
68. Sasaki M, Nakanuma Y, Gershwin ME, Demetris AJ, Wanless IR, Thung SN, Miyakawa H, Kage M, and Mitsui T. Biotin-related proteins of 70 and 72 kDa in gallbladder bile in primary biliary cirrhosis. *Hepatology Research* 1999;14,154-160. (C)
69. Wanless IR, Nakashima E, Sherman M. Regression of human cirrhosis: morphologic features and the genesis of incomplete septal cirrhosis. *Arch Pathol Lab Med* 2000;124:1599-607. (SRA)
70. Wanless IR. Epithelioid hemangioendothelioma, multiple focal nodular hyperplasias, and cavernous hemangiomas of the liver [letter]. *Arch Pathol Lab Med* 2000;124:1105-7. (SRA)
71. Wanless IR. Regression of human cirrhosis: In Reply. *Arch Pathol Lab Med* 2000;124:1592-3. (SRA)
72. Comay D, Cauch-Dudek K, Hemphill D, Diamandis E, Wanless I, Heathcote EJ. Are antibodies to carbonic anhydrase II specific for anti-mitochondrial antibody-negative primary biliary cirrhosis? *Dig Dis Sci* 2000;45(10):2018-21. (C)

73. Bigam DL, Pennington JJ, Carpentier A, Wanless IR, Hemming AW, Croxford R, et al. Hepatitis C-related cirrhosis: a predictor of diabetes after liver transplantation. *Hepatology* 2000;32:87-90. (C)
74. Demetris A, Adams D, Bellamy C, Blakolmer K, Clouston A, Dhillon AP, et al. Update of the International Banff Schema for Liver Allograft Rejection: working recommendations for the histopathologic staging and reporting of chronic rejection. An International Panel. *Hepatology* 2000;31:792-9. (C)
75. Bioulac-Sage P, Balabaud C, Wanless IR. Diagnosis of Focal Nodular Hyperplasia. *Am J Surg Pathol* 2001;25(10):1322-5. (SRA)
76. Wanless IR. Use of corticosteroid therapy in autoimmune hepatitis resulting in the resolution of cirrhosis (editorial). *J Clin Gastroenterol* 2001;32(5):371-2. (SRA)
77. Malkan G, Humar A, Lilly L, Greig PD, Grant D, Wanless IR, et al. Natural history of recurrent hepatitis C after liver transplantation. *Transplant Proc* 2001;33(1-2):1468. (C)
78. Bourdeau A, Faughnan ME, McDonald ML, Paterson AD, Wanless IR, Letarte M. Potential role of modifier genes influencing transforming growth factor- $\beta$ 1 levels in the development of vascular defects in endoglin heterozygous mice with hereditary hemorrhagic telangiectasia. *Am J Pathol* 2001;158(6):2011-20. (C)
79. Joshi S, Cauch-Dudek K, Wanless IR, et al. Primary biliary cirrhosis with additional features of autoimmune hepatitis: response to therapy with ursodeoxycholic acid. *Hepatology* 2002;35:409-13. (C)
80. Tinmouth J, Lee M, Wanless IR, Tsui FW, Inman R, Heathcote EJ. Apoptosis of biliary epithelial cells in primary biliary cirrhosis and primary sclerosing cholangitis. *Liver* 2002;22:228-34. (C)
81. Wanless IR, Sweeney G, Dhillon AP, et al. Lack of progressive hepatic fibrosis during long term therapy with deferiprone in subjects with transfusion-dependent Beta-thalassemia. *Blood*, 2002;100:1566-1569. (SRA)
82. Capurro M, Wanless IR, Sherman M, Deboer G Shi W, Miyoshi E, Filmus J. Glypican-3: a novel serum and histochemical marker for hepatocellular carcinoma, *Gastroenterology*, 2003;125:89-97. (C)
83. Wanless IR, Sweeney G, Dhillon AP, Guido M, Piga A, Galanello R, Schwartz E, Cohen A. Deferiprone and the treatment of iron overload (letter). *Blood* 2003;101: 5090-5091. (SRA)
84. Yeung E, Wanless IR, Wong F, Guindi M. Ramipril-associated hepatotoxicity, *Arch Pathol Lab Med* 2003;127(11):1493-7. (SRA)
85. Dahlan Y, Smith L, Simmonds D, Jewell LD, Wanless I, Heathcote EJ, Bain V. Pediatric-onset primary biliary cirrhosis. *Gastroenterology* 2003;125(5):1476-9.
86. Khalili K, Lan FP, Hanbidge AE, Muradali D, Oreopoulos DG, Wanless IR. Hepatic subcapsular steatosis in response to intraperitoneal insulin delivery: CT findings and prevalence. *AJR Am J Roentgenol* 2003;180:1601-4.
87. Wanless IR, Shiota K. The pathogenesis of nonalcoholic steatohepatitis (NASH) and other fatty liver diseases: A four step model including the role of lipid release and hepatic venular obstruction in the progression to cirrhosis. *Semin Liver Dis* 2004;24:99-106.(SRA).
88. Ward, NL, Haninec, AL, Van Slyke P, Sled JG, Sturk C, Henkelman RM, Wanless IR, Dumont DJ. Angiopoietin-1 causes reversible degradation of the portal microcirculation in mice: implications for treatment of liver disease. *Am J Pathol* 2004, 165(3):889-99.
89. Roskams TA, Theise ND, Balabaud C, Bhagat G, Bhathal PS, Bioulac-Sage P, Brunt EM, Crawford JM, Crosby HA, Desmet V, Finegold MJ, Geller SA, Gouw AS, Hytioglou P, Knisely AS, Kojiro M, Lefkowitz JH, Nakanuma Y, Olynyk JK, Park YN, Portmann B, Saxena R, Scheuer PJ, Strain AJ, Thung SN, Wanless IR,



- West AB. Nomenclature of the finer branches of the biliary tree: canals, ductules, and ductular reactions in human livers. *Hepatology*. 2004 Jun;39(6):1739-45.
90. de Groot CJ, van Goor GM, Stolk MF, Metselaar HJ, Janssen HL, Kazemier G, Zondervan PE, Wanless IR. Liver failure after delivery. *Gut* 2005;54(5):672.
  91. Feld JJ, Dinh H, Arenovich T, Marcus VA, Wanless IR, Heathcote EJ. Autoimmune hepatitis: effect of symptoms and cirrhosis on natural history and outcome. *Hepatology* 2005;42(1):53-62.
  92. Bioulac-Sage P, Balabaud C, Bedossa P, Scoazec JY, Chiche L, Dhillon AP, et al. Pathological diagnosis of liver cell adenoma and focal nodular hyperplasia: Bordeaux update. *J Hepatol* 2007;46:521-27.
  93. Wanless IR. International consensus on histologic diagnosis of early hepatocellular neoplasia, *Hepatology Research* 2007, 37 (Suppl 2), S139-41.
  94. Kojiro M, Wanless IR, Alves V, et al. Pathologic diagnosis of early hepatocellular carcinoma: a report of The International Consensus Group for Hepatocellular Neoplasia. *Hepatology*. 2009 Feb;49(2):658-64.
  95. Chaplin AC, Curley MA, Wanless IR. Clozapine-induced acute hepatic failure. *Can J Gastroenterol*. 2010 Dec;24(12):739-40.
  96. Kim SU, Oh HJ, Wanless IR, Lee S, Han KH, Park YN. The Laennec staging system for histological sub-classification of cirrhosis is useful for stratification of prognosis in patients with liver cirrhosis. *J Hepatol*. 2012;57:556-63.
  97. Soochan D, Keough V, Wanless I, Molinari M. Intra and extra-hepatic cystadenoma of the biliary duct. Review of literature and radiological and pathological characteristics of a very rare case. *BMJ case reports*. 2012 (epub pii: bcr0120125497. doi: 10.1136/bcr.01.2012.5497).
  98. Zheng Z, Molinari M, Sapp H, Jung SM, Wanless I, Huang WY. Benign epithelial inclusions in peripancreatic lymph nodes: a report of two cases and review of the literature. *Int J Surg Pathol*. 2012;20:570-6.
  99. Arnason T, Fleming K, Wanless IR. Peritumoural hyperplasia of the liver: a response to portal vein invasion by hypervascular neoplasms. *Histopathology* 2013; 62, 458–464.
  100. Fleming K, Wanless IR. Glutamine synthetase expression in activated hepatocyte progenitor cells and loss of hepatocellular expression in congestion and cirrhosis. *Liver International*, 2013; 33: 525–534
  101. Edwards L and Wanless IR. Mechanisms of liver involvement in systemic disease. *Best Pract Res Clin Gastroenterol* 2013;27: 471-483.
  102. Bedossa P, Brunt EM, Burt AD, Callea F, Clouston AD, Dienes HP, Goodman ZD, Gouw ASH, Hubscher SG, Roberts EA, Roskams T, Terracciano L, Tiniakos DG, Torbenson MS, Wanless IR. Well-differentiated hepatocellular neoplasm of uncertain malignant potential: proposal for a new diagnostic category. *Human Pathol* 2014;45: (3), 658-660.
  103. Brunt EM, Gouw ASH, Hubscher SG, Tiniakos DG, Bedossa P, Burt AD, Callea F, Clouston AD, Dienes HP, Goodman ZD, Roberts EA, Roskams T, Terracciano L, Torbenson MS, Wanless IR. Pathology of the liver sinusoids. *Histopathology* 2014;64:907-920.
  104. Botros N, Yan SR, Wanless IR. Malakoplakia of liver: report of two cases. *Pathol Res Pract*. 2014;210:459-62.
  105. Yan J, Kang Y, Xu S, Ong LL, Zhuo S, Bunte RM, et al. In vivo label-free quantification of liver microcirculation using dual-modality microscopy. *Journal of Biomedical Optics*. 2014;19(11):116006.
  106. Stueck, AE and Wanless IR. Hepatocyte buds derived from progenitor cells repopulate regions of parenchymal extinction in human cirrhosis. *Hepatology* 2015;61(5):1696-707.

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84. Roberts EA, Yang S, Wanless IR. Hepatic features of the Jackson Laboratory toxic milk (tx-j) mouse. Poster presented at 3<sup>rd</sup> International meeting on copper homeostasis and its disorders: Molecular and cellular aspects. Ischia, Italy, Oct 2002.
85. Sherman M, Filmus J, Wanless I, Capurro, M. Glypican-3: A novel diagnostic marker for hepatocellular carcinoma. *Hepatology* 2002 36:692A.

86. Wanless IR, Shiota K, Heathcote EJ. Role of hepatic vein obliteration in the progression of non-alcoholic steatohepatitis (NASH) to cirrhosis. *Hepatology* 2002;36:730A.
87. Takayama A, Wanless IR. Three-dimensional angioarchitecture of focal nodular hyperplasia and hypothesis on the pathogenesis. *Mod Pathol* 2004, 17: 313A.(platform presentation at USCAP Vancouver)
88. Wanless IR. Advanced liver pathology: Current controversies/advances: Evolution of cirrhosis. *Pathology International* 2004; 54 (Suppl 1): S289-90. (Platform presentation, Brisbane)
89. Sakhuja P, Wanless IR, Rizvi MR, Gondal R, Sarin SK. Liver histology in a rabbit model of E. Coli-induced non-cirrhotic portal hypertension. *Mod Pathol* 2006;19 (suppl 3);136. IAP Montreal September 2006 – poster presented.
90. Freitas J, Alves V, Freitas LA, Andrade ZA, Wanless IR. Congestive hepatopathy in schistosomiasis mansoni. Role in causing necrosis, fibrous septation, and fibrous obliteration of hepatic veins. *Mod Pathol* 2006;19 (suppl 3);135. IAP Montreal September 2006 – poster presented.
91. O'Shea AM, Wanless IR. Congestive hepatopathy: Possible role in the formation of tumour capsule in the liver. *Mod Pathol* 2006;19 (suppl 3);124. IAP Montreal September 2006 – poster presented.
92. O'Shea, AM, Guindi M, Sapp H, and Wanless IR. Congestive hepatopathy in hepatic adenoma. Role in causing hemorrhage, necrosis, and fibrosis, occasionally with features that mimic focal nodular hyperplasia. *Mod Pathol* 2006;19 (suppl 3);125. IAP Montreal September 2006 – poster presented.
93. Wanless IR, Carr BI, Ribeiro de Freitas J. Pathology Of Radiation-Induced Liver Disease Caused By 90yttrium-Microsphere Therapy For Hepatocellular Carcinoma In Patients With Cirrhosis. AASLD meeting, Boston, October 27, 2006 – poster presented.
94. Wanless IR, Sapp H, Guindi M, Olshansky D, and Takayama A. The Pathogenesis Of Focal Nodular Hyperplasia: An Hypothesis Based On Histologic Review Of 20 Lesions Including Three In Early Biliary Cirrhosis. *Hepatology* 2006;44 (S1): 491A. AASLD meeting, Boston, October 27, 2006 – poster presented.
95. Watt KDS, Sapp H, Peltekian KM, Molinari M, Walsh M, Couban, S, Wanless IR Recurrent idiopathic granulomatous phlebitis after liver transplantation: presentation and management. *Liver Transpl* 2007;13 (S1) S67. International Liver Transplantation Society Meeting, Rio de Janeiro, June 2007 - poster presented.
96. Wanless IR. EASL Monothematic Conference, Budapest, Hungary, Jan 22-24, 2009. Monothematic Conference. Lecture on “Vascular occlusion and parenchymal extinction”. Presentation published on EASL website.
97. Naugler C, Wanless IR. The microvasculature of the liver: a dynamic mathematical model for the study of liver disease. *Hepatology* 2009;50 (4 suppl): 483A. (poster presented)
98. Wanless IR, Fleming K, Arnason T. Peritumoral hyperplasia of the liver: Role of artery-to-portal vein shunt in the pathogenesis. *Mod Pathol*. 2010;23 suppl:373A.(poster presented)
99. Fleming K, Wanless IR. Hepatic glutamine synthetase expression in cirrhosis, veno-occlusive disease, adjacent to mass lesions, and focal nodular hyperplasia (FNH). *Mod Pathol* 2010;23 suppl:355A. (poster presented)
100. Cho SJ, Wanless IR, Pai R, Paradis V, Alves V, Bioulac-Sage P, Souza T, Makhoul H, Schirmacher P, Evason K, Ferrell L. FNH-like lesions and glutamine synthetase expression in the liver in hereditary hemorrhagic telangiectasia. *Mod Pathol* 2011 (platform presentation).

101. Wanless IR, Stueck AE. Nodular regenerative hyperplasia: a new subclassification based on the distribution of hepatic microvascular obstruction and arterialization. *Hepatology* 2013;58:595A. (AASLD Washington November, 2013, poster presented)
102. V. Eremina, I. R. Wanless, M. Lunyova, M. M. Hiroshima, J. Rossant, J Feld, and S.E. Quaggin. Postnatal Vegfr2 ablation in mice results in hepatic microvascular changes including decreased arteries, sinusoidal endothelial degeneration, infarcts, hepatic vein remodeling, and nodular regenerative hyperplasia. *Hepatology* 2013;58:457A. (AASLD Washington November, 2013, poster presented)
103. Wanless IR, Takayama A. Focal Nodular Hyperplasia is a response to artery-to-portal vein shunt causing arterialization and congestive injury that explains the map-like pattern of glutamine synthetase. *Hepatology* 2013;58:457A. (AASLD Washington November, 2013, poster presented)
104. Stueck A, Wanless IR. Regression of cirrhosis: The maturation sequence of buds arising from hepatocyte progenitor cells. *Hepatology* 2013;58:235A. (AASLD Washington November, 2013, platform presentation)
105. Stueck A, Wanless IR. Canals of Hering are remnants of distal bile ducts after regeneration of hepatocytes: a study of early chronic liver disease in humans. *J Hepatol* 2014;60 suppl, S102-103.(EASL London April 2014, poster presented)
106. Stueck A, Nakano M, Wanless IR. Vascularization of hepatocellular adenomas and carcinoma by co-option of portal tracts. *Hepatology* 2014;60:871A. (AASLD Boston November, 2014, poster presented)
107. Rodger A, Kulai T, Wanless I, Gruchy S. A case of probable green tea extract-induced hepatotoxicity associated with H63D homozygosity for hereditary hemochromatosis. *Can J Gastroenterol Hepatol* 2015; 29 Suppl A: 156A (CDDW poster presented).
108. Wanless IR, Ravi, PY. Importance of tissue collapse and unmasking of reticulin on the assessment of fibrosis in acute and chronic liver disease. *Hepatology* 2016;63:214A. (AASLD, Boston, 2016, poster presented).
109. Wanless IR. The mechanisms leading to the formation of cirrhosis and its regression. *Hepatology International*, 2018, Volume 12, Supplement 2, pp 181–661 (presented as State of the Art lecture, Asia-Pacific Association for Study of Liver Disease, New Delhi, March 17, 2018).
110. Wanless IR. The mechanism of irreversibility of late stage cirrhosis. *J Hepatology* 2018;68,S692 (suppl 1)(Poster presented April 14, 2018, EASL International Liver Congress, Paris).
111. Sun Y, Wang B, You H, Jia J, Chen S, Wu X, Zhou J, Ou X, Ravi P, Stueck A, Wanless IR. Artery density in human liver: valuable measure for staging chronic liver disease. *J Hepatol* (suppl 1), 2019. (Poster presented April 11, 2019, EASL International Liver Congress, Vienna).
112. Wang B, Sun Y, You H, Jia J, Chen S, Wu X, Zhou J, Ou X, Stueck A, Wanless IR. Characterisation of regeneration in chronic hepatitis B before and after entecavir treatment in 20 patients. *J Hepatol* (suppl 1), 2019. (Poster presented April 11, 2019, EASL International Liver Congress, Vienna).

## Invited lectures, national and international

1. American Association for the Study of Liver Diseases, Postgraduate Course: Liver Pathology, Chicago, November 1985: Lectures on "Alpha-1-antitrypsin deficiency" and "Nodular regenerative hyperplasia."
2. American Association for the Study of Liver Diseases, Chicago, November 1985: Lecture on "Morphometry of the liver."

3. International Conference on Advances in Morphometry and Ploidy Determination, September 1985, sponsored by Armed Forces Institute of Pathology, American Registry of Pathology, and National Cancer Institute: Lecture on "Morphometric studies of human liver".
4. Hepatic Pathology, CME course, sponsored by Armed Forces Institute of Pathology, Bethesda, August 1986: Lecture on "Nodular regenerative hyperplasia and related lesions."
5. VIIth International Congress of Liver Diseases (Basel Liver Week, Falk Symposium No. 44), Basel, October 1986: Lecture on "Pathogenesis of Non-cirrhotic Portal Hypertension."
6. Department of Pathology, Johns Hopkins Hospital, February 1987: Lecture on "Vascular pathology of the liver".
7. Royal College meeting, Winnipeg, Symposium in honour of Dr. Aron Rappaport, September 1987, sponsored by the Canadian Association for the Study of the Liver: Lecture on "Vascular pathology of the liver".
8. Liver Pathology Specialty Conference, International Academy of Pathology, Washington, March 1988: Case presentation.
9. Department of Pathology, Cornell University Medical College, April 1988: Grand Rounds on "Vascular pathology of the liver".
10. Scientific symposium: Recent progress in anatomic pathology, at meeting of American Society of Clinical Pathologists, Kansas City, April 1988: Lecture on "Nodular transformation of the liver: a classification."
11. Current Concepts in Liver Pathology, sponsored by College of P & S of Columbia University, New York, April 1988: Lecture on "Vascular pathology and nodular transformation of the liver."
12. Hepatic Pathology, CME course, sponsored by Armed Forces Institute of Pathology, Bethesda, August 1988: Lecture on "Alpha-1-antitrypsin deficiency."
13. Hepatic Pathology, CME course, sponsored by Armed Forces Institute of Pathology, Bethesda, August 1989: Lecture on "Benign liver nodules."
14. XVI World Congress of Societies of Anatomic and Clinical Pathology, Vancouver, June 1991: Lecture on "Pathology of Budd-Chiari Syndrome".
15. Canadian Assoc of Gastroenterology annual course, Quebec City, September 19, 1991. Lecture on "Pathology of chronic liver disease".
16. Department of Medicine and Pathology, Loyola University, Chicago, Visiting professor, October 2, 1991.
17. American Association for the Study of Liver Diseases, Postgraduate Course: Liver Pathology, Chicago, November 3, 1991: Lecture on "Non-cirrhotic portal hypertension".
18. Liver Pathology Specialty Conference, at U.S.Can. Academy of Pathology meeting, Atlanta, March 1992: Case presentation.
19. Visiting professor, sponsored by Canadian Liver Foundation, Vancouver, November 1992 (lectures and case presentations)
20. Visiting professor, sponsored by Canadian Liver Foundation, Edmonton, November 1992 (lectures and case presentations)
21. Visiting professor, sponsored by Canadian Liver Foundation, Winnipeg, November 1992 (lectures and case presentations)
22. Visiting professor, sponsored by Canadian Liver Foundation, Saskatoon, November 1992 (lectures and case presentations)

23. Visiting professor, sponsored by Canadian Liver Foundation, Calgary, November 1992 (lectures and case presentations)
24. Telemedicine Canada Pathology Rounds, February 1994: Diagnosis of hepatic tumours.
25. International Academy of Pathology, Japanese Division. Lecture on "Pathology of Focal Nodular Hyperplasia.", September 10, 1994.
26. Visiting professor, Kurume, Japan, September 1994. Lectures and case presentations.
27. Visiting professor, Kanazawa, Japan, September 1994. Lectures and case presentations.
28. Visiting professor, Chiba, Japan, September 1994. Lectures and case presentations.
29. Visiting professor, Tokyo, Japan, September 1994. Lectures and case presentations.
30. World Congress of Gastroenterology, Los Angeles, October, 1994: Lecture on "Pathophysiology of non-cirrhotic portal hypertension".
31. World Congress of Gastroenterology, Los Angeles, October, 1994: Report of Nomenclature Committee "Terminology of nodular lesions of the liver".
32. Congress of the International Academy of Pathology, Hong Kong, October, 1994: Lecture on "Macroregenerative nodules: a reappraisal of the pathogenesis and differential diagnosis".
33. Liver Pathology Specialty Conference, US-Can Academy of Pathology, Toronto, March 1995: Dysplasia and precursors of hepatocellular carcinoma.
34. Department of Pathology, Cornell University Medical College, November 27-8, 1995: Visiting professor, Slide seminar and Grand Rounds on "The two-hit vascular hypothesis for the pathogenesis of cirrhosis".
35. Liver Pathology Specialty Conference, US-Can Academy of Pathology, Washington, March 1996. Lecture on :The two-hit vascular hypothesis for the pathogenesis of cirrhosis.
36. Single-topic conference sponsored by American Association of the Study of the Liver "Liver Microcirculation in health and diseases", Reston, Virginia, June 21-24, 1996, Lecture: "Hepatic and portal vein microthrombosis: its significance in the pathogenesis of portal hypertension". Chair of session.
37. Hans Popper Hepatopathology Society, Orlando, March 1997. Lecture on "The role of vascular abnormalities in cirrhosis and liver tumors".
38. Science and Medicine Canada Symposium on Hepatitis C, Boca Raton, June 1997. "Classification of chronic hepatitis".
39. Invited lecture and case presentations, Bordeaux, France, September 1997. "The Pathogenesis of Cirrhosis".
40. Therapy in Liver Diseases, Barcelona, September 1997. Lecture on "Thrombosis and phlebitis in the pathogenesis of portal hypertension and cirrhosis".
41. American Association for the Study of Liver Diseases, Postgraduate Course: Liver Pathology, Chicago, November 1997: Lecture on "Role of ischemia in the development of cirrhosis".
42. Liver biopsy interpretations in assessing cell injury in liver disease. Meet the professor luncheon, American Association for the Study of Liver Diseases, Chicago, November 1997.
43. Invited lecture, Department of Pathology, University of Kurume, Japan: The pathogenesis of chronic liver disease. March 15, 1998.
44. Case presentation, Tokyo Medical and Dental College. March 17, 1998.

45. Invited lecture, Tokyo Women's Medical College: The pathogenesis of chronic liver disease. March 17, 1998.
46. Visiting professor, Brisbane (2 hospitals), June 6, 1998.
47. Keynote speaker, Gastroenterological Society of Queensland Annual Update, Coolumb, Australia, June 6-8, 1998.
48. Far North Queensland Gut Club, Cairns, Australia, Lecture on Pathogenesis of chronic liver disease, June 10, 1998.
49. Can. Assoc Study of Liver Disease - Single topic conference - Hepatocellular carcinoma - Niagara on the lake, June 1998. Lecture on "Pathology of early hepatocellular carcinoma and precursor lesions".
50. American Association for the Study of Liver Diseases, Postgraduate Course: Clinical and Pathological Correlations in Liver Disease, Chicago, November 1998: Lecture on "Hepatic Vascular Diseases".
51. Laennec Hepatopathology Society - November 7, 1998 - Chicago. Lecture: "Is cirrhosis reversible?"
52. NIH - Single topic conference - NASH - Bethesda, December 11, 1998 - Lecture on "Diabetes and non-alcoholic steatohepatitis".
53. University of Calgary, Department of Gastroenterology, Annual research symposium, Jan 1999. Lecture: "Pathology of nodular lesions of liver"
54. USCAP Liver Pathology Specialty Conference, March 24, 1999, San Francisco, Lecture on "Pathogenesis of incomplete septal cirrhosis".
55. University of Ottawa, Fourth Spring Pathology Course. Lecture: "Focal lesions of liver" May 1, 1999.
56. University of Ottawa, Department of Pathology, Annual Research Day, April 30, 1999. Lecture: "The development and regression of cirrhosis.
57. International Conference on Tissue Repair, Bordeaux, August 1999. Lecture on "Repair processes in the liver - the reversibility of cirrhosis"
58. Can. Assoc Study of Liver Disease - Single topic conference – Hepatic fibrosis - Kananaskis, October 17, 1999. Lecture on "Pathology of cirrhosis: development and reversal".
59. Visiting Professor, McMaster University, February 16, 2000. Lectures on "Pathogenesis of Focal Nodular Hyperplasia" and "Reversibility of Cirrhosis".
60. Lecture on "Pathophysiology of Non-alcoholic steatohepatitis", Canadian Digestive Diseases Week, Quebec City, March 12, 2000
61. Eleanor Humphreys visiting professor in surgical pathology, University of Chicago, April 19-21, 2000
62. Guest speaker (workshop and lecture), Quebec Association of Pathologists, Quebec, May 2000.
63. Laennec Society July 2000 Jackson's Point, Ontario
64. Slide seminar, Congress of IAP, Nagoya, co-moderator and lecture, October 2000
65. Lecture, Congress of IAP, Nagoya, October 2000
66. Guest speaker, Kurume University, Kurume, Japan, October 2000.
67. Guest speaker, Tsukuba University, Tsukuba, Japan, October 2000.
68. Guest speaker, Tokyo Women's Medical College, Tokyo, Japan, October 2000.

69. American Association for the Study of Liver Diseases, Postgraduate Course: Portal Hypertension: Lecture on "Hepatic microcirculatory changes in cirrhosis: The role of vascular changes in the pathogenesis of cirrhosis" Dallas, November 10, 2001
70. IAP-UK division. Lecture: "Vascular disease of the liver", London, November 23, 2001.
71. Workshop for Hepatologists: Cirrhosis / small hepatocellular carcinoma, Lectures: "What is cirrhosis?" and "Regression of cirrhosis", Arcachon, France, February 8, 2002.
72. Hans Popper Society Seminar at USCAP, organized seminar on "Fat in the liver" and delivered lecture on "Pathogenesis of non-alcoholic steatohepatitis" Chicago, February 24, 2002.
73. Single-topic conference sponsored by American Association of the Study of the Liver "Hepatic vascular disease", Lecture: "Budd-Chiari syndrome", Atlanta, March 9, 2002.
74. Biennial Meeting of the International Association for the Study of the Liver, Lecture on "Hepatocellular carcinoma", Madrid, April 16, 2002.
75. 12th International Conference on Oral Chelation in the Treatment of Thalassaemia and Other Diseases (ICOC), Santorini, Greece, July, 2002. Lack of liver fibrosis during long- term therapy with deferiprone.
76. Single-topic conference sponsored by American Association of the Study of the Liver "Non-alcoholic steatohepatitis", Lecture: "Cellular changes in NASH", Atlanta, September 2002.
77. American College of Gastroenterology course. Lecture: "Non-cirrhotic portal hypertension", October 2002, Seattle.
78. Laennec Liver Pathology Society, Lecture "Pathogenesis of Steatohepatitis", Boston, November 2002
79. Symposium on Staging of Hepatocellular carcinoma, sponsored by AJCC and Am Society of Hepatobiliary Surgery, Lecture: "Pathology of Hepatocellular Carcinoma", Boston, November, 2002
80. Visiting Professor with lecture, Brigham and Women's Hospital, Boston March 27, 2003.
81. Trey Memorial Symposium, Chronic cholestatic liver diseases, Sponsored by American Liver Foundation, Lecture: "Pathology of Biliary Disease, March 29, 2003, Boston.
82. Keynote speaker, Brazilian Society of Pathology, 3 lectures, Florianópolis, Brazil, May 2003.
83. Visiting professor, 3 days with lecture: Pathogenesis and regression of cirrhosis, Salvador, Brazil, May 2003
84. Single-topic conference sponsored by American Association of the Study of the Liver "Hepatic neoplasia", Lecture: "Pathology of HCC", Atlanta, September, 2003
85. Annual meeting American Association of the Study of the Liver, Lecture on Evaluation of hepatic nodules: Pathologist or radiologist or both. Boston, Nov. 2003
86. Single topic conference, Montreal, April 3, 2004. Lecture: Structural changes leading to progression of cirrhosis and portal hypertension.
87. Leuven, Belgium, May 13-15, 2004 – International Consensus Group for hepatic neoplasia (second meeting). Organized and chaired consensus conference on nomenclature and classification of early hepatocellular neoplasia.
88. Leuven, Belgium, May 15-16, 2004 – Laennec Hepatic Pathology Society. Organized and chaired meeting. Lecture: Grading systems for fibrosis in the liver.
89. Graz, Austria, June 11-13, 2004 – Gnomes meeting, lecture: Pathogenesis of cirrhosis.
90. Turino, Italy, June 14-15, 2004 – EASL Single topic conference, chaired session.

91. Single-topic conference sponsored by Canadian Association of the Study of the Liver "Drugs and the liver", Lecture: "Histologic patterns of drug reactions", Niagara, June, 2004.
92. Kurume, Japan, October 2004 – Lecture: Parenchymal extinction in the pathogenesis of cirrhosis.
93. Brisbane, Australia, IAP congress, October 2004 – Lecture: Parenchymal extinction in the pathogenesis of cirrhosis.
94. Brisbane, Australia, IAP congress, October 2004 – Lecture: Precursor lesions of hepatocellular carcinoma
95. Brisbane, Australia, IAP congress, October 2004 – Lecture: Evolution of cirrhosis
96. Chandigarh, India, Dec 2004 – The pathogenesis and regression of cirrhosis
97. New Delhi, India, APASL, Dec 2004 – State of the Art Lecture: Pathogenesis of cirrhosis
98. New Delhi, India, APASL, Dec 2004 – Lecture: Spectrum of drug-induced liver disease
99. New Delhi, India, APASL, Dec 2004 – State of the Art Lecture: Regression of cirrhosis
100. New Delhi, India, PB Pant Hospital, Dec 2004 - Lecture: Pathology of noncirrhotic portal hypertension.
101. San Antonio, Texas, USCAP, Hans Popper Hepatic Pathology Seminar, Feb. 27, 2005 – Lecture: Nomenclature of small hepatocellular nodules.
102. Sao Paulo, Brazil, March 7, 2005 – Resident's slide seminar.
103. Sao Paulo, Brazil, March 8, 2005 – Pathogenesis of chronic liver disease.
104. Salvador, Brazil, March 9-14, 2005. Visiting professor, Lecture: Pathology of chronic liver disease: comparison of cirrhosis and pipe-stem fibrosis of schistosomiasis.
105. Banff, Canada. Canadian Association for Study of the Liver, Annual Meeting, March 21, 2005. Gold Medalist Lecture: An integrated hypothesis for the pathogenesis of chronic liver disease.
106. Baveno, Italy, April 26-29, 2005 – invited panelist, coauthor position paper – pathologic definition of hepatocellular carcinoma and precursor lesions
107. Rome, May 2005 – Gnomes meeting, lecture
108. Seoul, May 2005 – Guest lecturer, Korean Association for Study of the Liver (Lecture: Fibrogenesis and the liver).
109. Seoul, May 2005 – Guest lecturer, Korean Association for Study of the Liver (Lecture: Pathogenesis of cirrhosis)
110. Bordeaux, June 2005 – Laennec Liver Pathology Society: Lecture: Fibrosis and the liver
111. Bordeaux, June 2005 – Consensus conference on hepatocellular nodules: Lecture: pathology of telangiectatic focal nodular hyperplasia.
112. Barcelona, June 2005 – Single topic conference on HCC: presentation of consensus document: "Recommendations for pathology of hepatocellular carcinoma".
113. Charlottesville, Virginia. October 10, 2006 - Single topic conference on Coagulation and the liver, Lecture: "Thrombosis and parenchymal extinction".
114. Padua, Italy, November 18, 2005 –visiting professor, lecture "The pathogenesis of cirrhosis".
115. Padua, Italy, November 22, 2005, Conference entitled Attualita e prospettive in Epatologia, Lecture on "Diagnosis of regenerative and neoplastic nodules in the liver".
116. Awaji, Japan, Dec 2, 2005 – Single topic conference on Hepatocellular carcinoma, Lecture: HCC, international consensus



117. Seoul, Dec. 5, 2005 – visiting professor with lecture on “Congestive hepatopathy”.
118. Chandigarh, India, Post-graduate Institute MER, February 21, 2006: Lecture: “Congestive Hepatopathy”.
119. New Delhi, All India Institute of Medical Science, February 22, 2006, Lecture “The pathogenesis of cirrhosis”.
120. Nagpur, India, Annual meeting of India Association for Study of Liver disease, February 24, 2006. Lecture “Non-cirrhotic portal hypertension”.
121. Miraj, India, Wanless Hospital at Miraj Medical Centre, February 27, 2006, lecture “Nodular lesions of the liver”.
122. New Delhi, G.B Pant Hospital, March 1, 2006. Lecture “The pathogenesis of cirrhosis”.
123. New Delhi, Apollo Hospital, March 2, 2006, Lecture “Nodular lesions of the liver”.
124. Boston, MGH, Visiting professor, April 6, 2006, Lecture on “What is cirrhosis?”. Plus seminar with case presentations.
125. Thessaloniki, Greece, . Laennec Liver Pathology Society, May 10-14, 2006. Lecture on “Diagnosis of early hepatocellular carcinoma”.
126. Bethesda, NIH, Visiting professor, May 25, 2006, Lecture “What is cirrhosis?” Plus seminar with case presentation.
127. Montreal, IAP Congress, Sept 10, 2006, Vascular lesions and “congestive hepatopathy” in the pathogenesis of cirrhosis and its regression”.
128. Boston, AASLD, October 27, 2006. Transplantation Course. Lecture on “Pathology of Budd-Chiari Syndrome”.
129. Boston, Laennec Liver Pathology Society, October 2006. Lecture on “Gaia and the liver: What we can learn from global warming”.
130. Calcutta, December 8, 2006, Single topic conference on Hepatic Fibrosis, Indian Association for Study of Liver. Lecture on “Progression of chronic hepatitis: Pathologic features and evolution.”
131. Calcutta, December 8, 2006, Single topic conference on Hepatic Fibrosis, Indian Association for Study of Liver. Debate: “Chronic liver disease should be understood in terms of fibrosis only”.
132. Calcutta, December 9, 2006, Single topic conference on Hepatic Fibrosis, Indian Association for Study of Liver. Lecture on “NCPF and cirrhosis: Two metastable states in the liver”.
133. Moncton, NB. April 20, 2007, Visiting professor, Lecture on “Pathogenesis of cirrhosis”.
134. Lyon, France, International Liver Pathology Study Group (Gnomes), May 11, 2007. Lecture on “Parallel Universes: Cosmology and Cirrhosis”. Plus case presentations.
135. Philadelphia, Einstein Medical Center, June 1, 2007, Visiting professor, lecture on “Pathogenesis of cirrhosis: IOI”. Plus resident seminar.
136. Toronto, CLMC Congress, June 12, 2007. Lecture on “Pathology and pathogenesis of fatty liver disease”.
137. Chester, NS. Laennec Liver Pathology Society, July 26, 2007, Lecture on “Role of angiogenesis and vascular shunting in the pathogenesis of cirrhosis.
138. Barcelona, October 2007. Visiting professor, Lecture on “Angiogenesis, congestive hepatopathy, and cirrhosis”
139. Paris, October 2007, Visiting professor, Lecture on “Angiogenesis in the liver”

140. Boston, November 2007, Annual Postgraduate Course of AASLD, faculty and course co-director. Lecture on "Vascular disease and cirrhosis".
141. Taipei, December 2007, Bilateral Canada-Taiwan conference of liver cancer. Lecture on "Diagnosis of early hepatic neoplasia"
142. Soeul, January 2008: Lecture on: "Techniques for staging of chronic liver disease"
143. Soeul, March 2008, Asia Pacific Assoc Study of Liver (APASL): Lecture on: "Staging of chronic hepatitis"
144. Soeul, March 2008, APASL: Lecture on: "Pathology of non-alcoholic fatty liver disease"
145. Soeul, March 2008. APASL: Lecture on: "Pathology in vascular diseases of liver"
146. Cologne, June 2008, International Liver Pathology Study Group (Gnomes), Lecture on "Role of hepatic vein occlusion in the pathogenesis of cirrhosis and hepatic arterialization", plus case presentations.
147. Padua, July 2008, Laennec Liver Pathology Society. Lecture on "The Laennec Staging System revision for 2009, project overview".
148. Athens, August 2008 IAP Congress. Lecture on "Going with the flow: the importance of vascular abnormalities in chronic liver disease".
149. San Francisco, Laennec Liver Pathology Society, November 2008. Lecture on "The Laennec Staging System, update 2008".
150. Fukuoka, Japan, 7<sup>th</sup> JSH Single Topic Conference "Hepatic hemodynamic disorders", November 22, 2008. Lecture on "Vascular injury and the pathogenesis of cirrhotic and non-cirrhotic portal hypertension".
151. Budapest, January 22-24, 2009, EASL Monothematic Conference. Lecture on "Vascular occlusion and parenchymal extinction".
152. Sao Paulo, Brazil, April 23, 2009, 4<sup>th</sup> Liver Pathology Meeting. Lecture on "Pathology of vascular disorders".
153. Sao Paulo, Brazil, April 24, 2009, 4<sup>th</sup> Liver Pathology Meeting. Lecture on "Parenchymal extinction: coagulation and hepatic fibrogenesis".
154. Sao Paulo, Brazil, April 24, 2009, 4<sup>th</sup> Liver Pathology Meeting. Lecture on "Vascular aspects of liver tumors".
155. Groningen, The Netherlands, May 7-9, 2009. Lecture and seminar: "The Laennec Staging System 2009" and Lecture on "The pathogenesis of focal nodular hyperplasia and the liver *in silico*".
156. Marriotts Cove, NS, June 2009, International Liver Pathology Study Group (Gnomes), Lecture on "The pathogenesis of focal nodular hyperplasia", plus case presentations.
157. Halifax, NS. July 15, 2009. Annual Meeting Canadian Association of Pathologists. Cam Coady Slide Seminar: "Chronic Liver Disease: Classification, Evaluation, Differential Diagnosis, and Mimics"
158. London, UK, Jan 28, 2010, Symposium in honour of Bernard Portmann: Lecture on "Pathogenesis of Cirrhosis".
159. Washington DC, March 22-26, 2010, USCAP: Specialty Conference Lecture on "Peritumoural hyperplasia"
160. Singapore, May 10, 2010, Visiting professor: Lecture on: "The pathogenesis of cirrhosis".
161. Seoul, Korea, May 12-15, 2010, Lectures: "The Laennec Staging System 2010" and Lecture on "The nomenclature of toxic microvascular injury".
162. Paris France, June 2-5, 2010, International Liver Pathology Study Group, Case presentations.

163. Bordeaux, France, June 11, 2010, Symposium in honour of Paulette Bioulac-Sage: Lecture on "Regression of cirrhosis".
164. Izmir, Turkey, September 2010: Lecture on: "The pathogenesis of cirrhosis".
165. Eskisehir, Turkey, September 2010. Congress of Pathology. Lecture and Slide seminar: Lecture on: "The pathogenesis of cirrhosis".
166. Eskisehir, Turkey, September 2010. Congress of Pathology. Slide seminar: "Hepatocellular mass lesions".
167. Sao Paulo Oct 2010 IAP Congress. Lecture: "The pathogenesis of cirrhosis".
168. Boston. Nov 2010, AASLD Breakfast workshop. Non-cirrhotic portal hypertension
169. Taipei, May 20-24, 2011 Asia Pacific IAP Congress. Lecture. Invitation declined.
170. Washington DC, May 2011. Laennec Liver Pathology Society, Lecture on: "The pathogenesis of Focal Nodular Hyperplasia".
171. St. Louis, June 2011. International Liver Pathology Study Group (Gnomes), Lecture on: "Pathology and pathogenesis of veno-occlusive disease".
172. Chandigarh, India. 3 lectures, including Keynote lecture, plus 3 hours seminar teaching in postgraduate course, Sept 30-Oct 2, 2011.
173. New Delhi, India, January 28-29, 2012. Clinicopathological conference. (2 lectures, workshop)
174. Vellore, India, Christian Medical College. Visiting Professor. February 3-4, 2012 (3 lectures, workshop)
175. Heidelberg, Germany, May 2012. Laennec Liver Pathology Society, Lecture on: "Regression of cirrhosis: Mechanisms of regeneration and value of the glutamine synthetase stain".
176. Mwanza, Tanzania, July 2012. International Liver Pathology Study Group (Gnomes), Lectures on: "Pathology and pathogenesis of cirrhosis" and "Pathogenesis and classification of nodular regenerative hyperplasia".
177. Vatican City, Rome, December 5, 2012. Department of Pathology, Bambino Jesu Hospital, Lecture on: Pathogenesis of focal nodular hyperplasia.
178. Brisbane, May 2, 2013. International Liver Pathology Study Group (Gnomes), Case presentations and Lecture on: Nodular liver lesions in Budd-Chiari Syndrome.
179. Singapore, May 16, 2013. Laennec Liver Pathology Society, Lecture on: Arterialization of the liver: Mechanisms and application to the classification of regenerative nodules (NRH, LRN, FNH) and hepatocellular adenomas.
180. Singapore, June 7, 2013. Asia-Pacific Assoc Study of Liver. Lectures on: "New concepts in pathogenesis and regression of cirrhosis" and "New classification of cirrhosis – pathological perspective"
181. Busan, Korea, September 6, 2013. Asia-Pacific Congress of Int Academy of Pathology, Lecture on: Recent developments in liver fibrosis.
182. Kurume, Japan. Sept 2013. Invited lecture: Pathogenesis cirrhosis and focal nodular hyperplasia.
183. Berlin, Oct 2013: United European Gastroenterology Week 2013: Lecture: Pathogenesis of cirrhosis: Going with the flow.
184. New York, May 10, 2014: Laennec Liver Pathology Society. Lecture: Pathogenesis of cirrhosis
185. Ravello, Italy. May 29, 2014: International Liver Pathology Study Group (Gnomes), Case presentations and Lecture on: Regression of Cirrhosis: Role of the Progenitor (Ductular) Reaction.
186. Vellore, India, Jan. 21-23, 2015: Visiting Professor, CME: 4 lectures, one slide seminar

187. Madrid, Feb. 26, 2015: Spanish Association for Study of Liver diseases. Keynote speaker: Pathogenesis of cirrhosis: Relative role of parenchymal extinction and fibrogenesis.
188. Boston, March 21-27, 2015. USCAP and Hans Popper Hepatopathology Society. Lecture on: Noncirrhotic Portal Hypertension and Pathology of the Sinusoids.
189. Birmingham, UK. May 27-29, 2015, International Liver Pathology Study Group (Gnomes). Lecture: Archeology of parenchymal extinction and cirrhosis.
190. Paris, June 24-26, 2015, Laennec Liver Pathology Society. Lecture and discussion of consensus document: The nomenclature of microvascular disease of liver, including veno-occlusive disease (sinusoidal obstruction syndrome).
191. Paris, June 24-26, 2015, Laennec Liver Pathology Society. Lecture: The pathogenesis of non-cirrhotic portal hypertension
192. Charlottesville, Virginia, Oct. 3-4, 2015. Coagulation in liver disease symposium VI. Lecture: Parenchymal extinction: the means to progression of chronic liver disease.
193. Adelaide, Australia, April 2016, International Liver Pathology Study Group (Gnomes). Lecture: What does Collagen Proportionate Area (CPA) measure?
194. Sao Paulo, Brazil, July 2016. Laennec Liver Pathology Society. Lecture: What is cirrhosis? Fibrosis or Parenchymal Extinction.
195. Boston, November 1-4, 2016. AASLD, Portal hypertension Special Interest Group. Platform presentation: What is cirrhosis? Fibrosis or Parenchymal Extinction.
196. Merida, Mexico. May 2017, Mexican Congress of Pathology. Lecture: Nuevos conceptos en la patogénesis y regresión de la cirrosis hepática (given in English).
197. Groningen, Netherlands, May 2017, International Liver Pathology Study Group (Gnomes). Lecture: Hepatic fibrosis: What, where, when, how?
198. Lausanne, Switzerland, May 2017. Centre Hospitalier Universitaire Vaudois. Lecture: Pathogenesis of cirrhosis: progression and regression.
199. Bali, Indonesia, June 2017. Laennec Liver Pathology Society. Lecture: The natural history of ductular reaction in severe cirrhosis.
200. Bela Horizonte, Brazil, Nov 2017. Brazilian Congress of Pathology. Lecture: Lesões vasculares sinusoidais (given in English).
201. Bela Horizonte, Brazil, Nov 2017. Brazilian Congress of Pathology. Lecture: Lesões de veias do sistema supra hepático (given in English).
202. New Delhi, March 17, 2018, Asian Pacific Assoc for study of Liver. State of the Art lecture: Hepatic fibrosis and vascular disease in the pathogenesis and regression of cirrhosis.
203. New Delhi, March 17, 2018, Asian Pacific Assoc for study of Liver. Lecture in Liver pathology symposium: Virtual microscopy in evaluation of liver fibrosis
204. Athens, May 2-5, 2018, International Liver Pathology Study Group (Gnomes). Lecture: Vascular injury in sinusoidal obstruction disease.
205. Halifax, Canada, June 6-9, 2018. Laennec Liver Pathology Society. Lecture: Vascular injury in sinusoidal obstruction syndrome.
206. Beijing and Shanghai, October 2018, Lecture (given 3 times): The mechanisms leading to the formation of cirrhosis and its regression..

207. Berne, December 13, 2018. Lecture: Histological assessment of liver fibrosis and cirrhosis: New perspectives and new techniques.
208. Zurich, December 14, 2018. Lecture: Histological assessment of liver fibrosis and cirrhosis: New perspectives and new techniques.
209. Vienna, April 10, 2019, International Liver Congress (EASL) Postgraduate course lecture: Information provided by liver biopsy in the diagnosis of cirrhosis.
210. Hong Kong, April 26, 2019. Laennec Liver Pathology Society. Lecture: Histological assessment of fibrosis and cirrhosis: From concept of parenchymal extinction to a revised Laennec staging system.
211. Rochester, MN, June 21, 2019. International Liver Pathology Study Group (Gnomes). Lecture: What are the sources of fibrosis in cirrhosis?
212. Shanghai, August 3, 2019. Lecture: Pathogenesis of cirrhosis and Regression: A Pathologist's perspective, delivered live (by Zoom). Hosted by Chenghai Liu.
213. Boston: November 2019: Invited lecture (Hosted by Hong You): Histology of chronic hepatitis B, a 5 year followup of a therapeutic trial in China.
214. Baveno, Italy, March 20, 2020, Lecture: Parenchymal extinction lesions in progression of chronic liver disease. Can they regress?

## Summary of research endeavors

Dr. Ian R. Wanless, MD, FRCPC

Department of Pathology, Dalhousie University, Halifax, Canada

This section summarizes my most focused research activities with relevant publications clustered into 4 areas.

### 1. Pathogenesis of hepatic steatosis and steatohepatitis

These studies are the first to document the role of insulin in human fatty liver disease, providing insight into the pathogenesis of fatty liver of obesity (NASH), post-jejuno-ileal bypass, and alcoholic liver disease, focal fatty liver and focal fatty sparing.

- Wanless IR, Bargman J, Oreopoulos D, Vas S. Subcapsular steatonecrosis of the liver in response to peritoneal insulin delivery: A clue to the pathogenesis of steatonecrosis in obesity. *Modern Pathology* 1989;2:69-74.
- Wanless IR, Lentz JS. Fatty liver hepatitis (steatohepatitis) and obesity: An autopsy study with analysis of risk factors. *Hepatology* 1990;12:1106-1110.
- Battaglia DM, Wanless IR, Brady AP, Mackenzie RL. Intrahepatic sequestered segment of liver presenting as focal fatty change. *Am J Gastroenterology* 1995;90:238-239.
- Edwards L and Wanless IR. Mechanisms of liver involvement in systemic disease. *Best Pract Res Clin Gastroenterol* 2013;27: 471-483.

### 2. Pathogenesis and classification of various forms of nodular hyperplasia

These studies propose that the many different diseases having nodules of hyperplastic hepatocytes are all caused by vascular abnormalities in the liver. The various forms can be explained by the distribution of the vascular lesions. Several new varieties of nodules were described in the course of this work (telangiectatic type of FNH, multiple FNH syndrome, and focal hyperplasia with angiogenesis secondary to localized hepatic vein thrombosis (HAT) and focal hyperplasia in Budd-Chiari syndrome).

- Wanless IR, Godwin TA, Allen F, Feder A. Nodular regenerative hyperplasia of the liver in hematologic disorders: A possible response to obliterative portal venopathy. *Medicine (Baltimore)* 1980;59:367-379.
- Wanless IR, Solt L, Kortan P, et al. Nodular regenerative hyperplasia of the liver associated with macroglobulinemia: A clue to the pathogenesis. *Am J Med* 1981;70:1203-1209.
- Wanless IR, Bernier V, Seger M. Intrahepatic portal sclerosis in patients without history of liver disease: An autopsy study. *Am J Pathol* 1982;106: 63-70.
- Thorne C, Urowitz M, Wanless IR, Roberts E, Blendis L. Liver disease in Felty's syndrome. *Am J Med* 1982;73:35-40.
- Reynolds J, Wanless IR. Nodular regenerative hyperplasia of the liver in a patient with rheumatoid arteritis. *J Rheumatol* 1984;11: 838-842.
- Wanless IR, Lentz JS, Roberts EA. Partial nodular transformation of the liver in an adult with persistent ductus venosus. A review with hypothesis on the pathogenesis. *Arch Pathol Lab Med* 1985;109:427-432.
- Wanless IR, Mawdsley C, Adams R. On the pathogenesis of focal nodular hyperplasia of the liver. *Hepatology* 1985;5:1194-1200.
- Wanless IR, Gryfe A. Nodular transformation of the liver in hereditary hemorrhagic telangiectasia. *Arch Pathol Lab Med* 1986;110: 331-335.
- Wanless IR, Albrecht S, Bilbao J, Frei JV, Heathcote EJ, Roberts EA, Chiasson D. Multiple focal nodular hyperplasia of the liver associated with vascular malformations of various organs and neoplasia of the brain: a new syndrome. *Modern Pathology* 1989;2:456-462.
- Wanless IR. Micronodular transformation (nodular regenerative hyperplasia) of the liver: a report of 64 cases among 2500 autopsies and a new classification of benign hepatocellular nodules. *Hepatology* 1990;11:787-797.
- International Working Party of World Congresses of Gastroenterology. Terminology of Nodular Lesions of the Liver. *Hepatology* 1995;22:983-993.

- McEntee M, Wright K, Wanless IR, DeNovo R, Shull R. Non-cirrhotic portal hypertension and nodular regenerative hyperplasia of the liver in dogs with mucopolysaccharidosis I (MPS-I). *Hepatology* 1998; 28:385-90.
- Wanless, IR, Terris B, Bioulac-Sage P, Balabaud C, Fléjou JF, Degott C, Belghiti J, Hemming A, Greig P. Focal Hyperplasia (FH) of liver associated with localized hepatic vein thrombosis: a lesion with some features of “focal nodular hyperplasia”. (Presented at USCAP, New Orleans, March 2000).
- Arnason T, Fleming K, Wanless IR. Peritumoural hyperplasia of the liver: a response to portal vein invasion by hypervascular neoplasms. *Histopathology* 2013; 62, 458–464.
- Wanless IR, Takayama A. Focal Nodular Hyperplasia is a response to artery-to-portal vein shunt causing arterialization and congestive injury that explains the map-like pattern of glutamine synthetase. *Hepatology* 2013;58:457A. (AASLD Washington November, 2013, poster presented)
- Wanless IR. Benign Liver Tumours, in *Sherlock's Diseases of the Liver and Biliary System*, 13th edition, edited by Dooley JS, Lok A, Burroughs A, Heathcote J., Wiley-Blackwell, Oxford, 2018, pp 693-704. (Discussion on pathogenesis of Focal Nodular Hyperplasia)

### 3. The role of vascular disease and angiogenesis in the pathogenesis of cirrhosis

- These studies describe the “The 2-hit vascular model for the pathogenesis of cirrhosis”. This model describes how 1) obliteration of the portal vein supply and the hepatic vein drainage causes obligate extinction of the supplied acinar parenchyma and 2) cirrhosis is the accumulation of many separate extinction lesions arising from discrete obliterative vascular events.
- Wanless IR, Liu J, Butany J. Role of thrombosis in the pathogenesis of congestive hepatic fibrosis (cardiac cirrhosis). *Hepatology* 1995;21:1232-1237.
- Wanless IR, Wong F, Blendis LM, Greig P, Heathcote EJ, Levy G. Hepatic and portal vein thrombosis in cirrhosis: possible role in development of parenchymal extinction and portal hypertension. *Hepatology* 1995;21:1238-1247.
- Wanless IR. Thrombosis and phlebitis in the pathogenesis of portal hypertension and cirrhosis: the 2-hit hypothesis for the pathogenesis of chronic liver disease. In Arroyo V, Bosch J, Bruguera M, Rodes J (eds). *Therapy in Liver Diseases*, Barcelona, Masson, 1997, pp 47-50.
- Shimamatsu K, Wanless IR. Role of ischemia in causing apoptosis, atrophy, and nodular hyperplasia in human liver. *Hepatology* 1997;26:343-350.
- Moreno-Merlo F, Wanless IR, Shimamatsu K, Sherman M, Greig P, Chiasson D. The role of granulomatous phlebitis and thrombosis in the pathogenesis of cirrhosis and portal hypertension in sarcoidosis. *Hepatology* 1997;26:554-560.
- Tanaka M, Wanless IR. Pathology of the liver in Budd-Chiari syndrome: portal vein thrombosis and the histogenesis of veno-centric cirrhosis, veno-portal cirrhosis, and large regenerative nodules. *Hepatology* 1998;27:488-496.
- Wanless IR, Shimamatsu K. The histogenesis of biliary cirrhosis. *Mod Pathol* 1999;12:169A. (Poster, USCAP, San Francisco, March 1999)
- Wanless IR. Arterialization of the liver causes baro-injury in cirrhosis and focal nodular hyperplasia (FNH) *Hepatology* 1999;30:571A
- Ward NL, Haninec AL, Van Slyke P, Sled JG, Sturk C, Henkelman RM, et al. Angiopoietin-1 causes reversible degradation of the portal microcirculation in mice: implications for treatment of liver disease. *Am J Pathol* 2004;165(3):889-99.
- Wanless IR and Huang W. Vascular disorders. In Burt AD, Portmann BC, Ferrell LD (eds). *MacSween's Pathology of the Liver*, 6th edition, Churchill Livingstone, Edinburgh, 2012, pp 601-643.
- Fleming K, Wanless IR. Glutamine synthetase expression in activated hepatocyte progenitor cells and loss of hepatocellular expression in congestion and cirrhosis. *Liver International*, 2013; 33: 525–534
- Stueck, AE and Wanless IR. Hepatocyte buds derived from progenitor cells repopulate regions of parenchymal extinction in human cirrhosis. *Hepatology* 2015;61(5):1696-1707.
- Wanless, IR. The role of vascular injury and congestion in the pathogenesis of cirrhosis: the congestive escalator and the parenchymal extinction sequence. *Current Hepatology Reports*. 2020;19(1):40-53. Open Access, (For supplementary electronic content (video), see journal website at: <https://link.springer.com/article/10.1007/s11901-020-00508-y> or [www.ianwanless.ca](http://www.ianwanless.ca)).

#### 4. The reversibility of cirrhosis

These studies demonstrate the histologic appearance of repair processes in the cirrhotic liver. Recognition of these features allows a reinterpretation of the natural history of cirrhosis, incomplete septal cirrhosis, and various types of noncirrhotic portal hypertension such as idiopathic portal hypertension. The major conclusion is that cirrhosis is in a constant state of regression towards normal. In most chronic diseases, this process of regression is interrupted by periods of activity that worsen the state of fibrosis. Currently, work is in progress to define the factors that prevent regression of some fibrous septa and thus prevent regression in many patients.

- Nakashima E, Kage M, Wanless IR. Idiopathic portal hypertension: Histologic evidence that some cases may be regressed cirrhosis with portal vein thrombosis. *Hepatology* 1999;30:218A. (Poster presented at AASLD, Dallas, Nov 1999.)
- Wanless IR, Nakashima E, Sherman M. Regression of human cirrhosis: morphologic features and the genesis of incomplete septal cirrhosis. *Arch Pathol Lab Med* 2000 124:1599-607.
- Wanless IR. Regression of human cirrhosis: In Reply. *Arch Pathol Lab Med* 2000;124:1592-3.
- Ward NL, Haninec AL, Van Slyke P, Sled JG, Sturk C, Henkelman RM, et al. Angiopoietin-1 causes reversible degradation of the portal microcirculation in mice: implications for treatment of liver disease. *Am J Pathol* 2004;165(3):889-99.
- Nakashima E, Wanless IR. Most non-cirrhotic livers with hepatocellular carcinoma (HCC) have evidence of fibrosis or regressed cirrhosis: implications for the pathogenesis of HCC. *Hepatology* 1999;30:257A. (Poster presented at AASLD, Dallas, Nov 1999.)
- Wanless IR and Huang W. Vascular disorders. In Burt AD, Portmann BC, Ferrell LD (eds). *MacSween's Pathology of the Liver*, 6th edition, Churchill Livingstone, Edinburgh, 2012, 601-643.
- Stueck, AE and Wanless IR. Hepatocyte buds derived from progenitor cells repopulate regions of parenchymal extinction in human cirrhosis. *Hepatology* 2015;61(5):1696-707.
- Wanless IR. The mechanism of irreversibility of late stage cirrhosis. *J Hepatology* 2018;68,S692 (suppl 1)(Poster presented April 14, 2018, EASL International Liver Congress, Paris).(Full paper version in preparation, 2020)



## Brief Biography

Dr. Ian R. Wanless, MD, FRCPC

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Dr. Wanless is a graduate of McGill University, with post-graduate training at the University of Alberta and Cornell University Medical College, New York. After spending 28 years at the University of Toronto, he is now a Professor of Pathology at Dalhousie University and Queen Elizabeth II Health Sciences Centre in Halifax.

Dr. Wanless' research has concentrated on 3 areas of liver pathology, including steatohepatitis, nodular hyperplasia (including NRH and FNH), and the role of vascular events in the pathogenesis and regression of cirrhosis.

His studies were the first to document the role of insulin and hyperinsulinemia in human fatty liver disease, providing insight into the pathogenesis of fatty liver occurring in obesity (NASH), alcoholism, and post-jejuno-ileal bypass. He demonstrated how heterogeneity of insulin delivery to the tissues explains focal fatty change and focal fatty sparing.

His studies of the hepatic vasculature provide insights for the pathogenesis of focal nodular hyperplasia, nodular regenerative hyperplasia, non-cirrhotic portal hypertension, cirrhosis, and toxic sinusoidal injury (sinusoidal obstruction syndrome). Current interest documents the regression of cirrhosis, including the discovery of regenerative hepatocellular buds and details of their maturation sequence, including the genesis of canals of Hering, and the vascular factors that limit the ability of the cirrhotic liver to undergo complete regression. Current work in progress documents the importance of collapse in causing a significant proportion of the increased concentration of collagen in cirrhosis.