

# Inflammatory Bowel Disease in PSC

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# Inflammatory Bowel Disease

- Chronic multisystem disease of unknown etiology characterised by recurrent flares and periods of remission.
- Currently no known cure ,but must be treated to avoid complications.
- There are about 1.5million people in U.S with IBD.Incidence increasing in U.S and round the world.

- IBD spares no socioeconomic group, ethnic grouping or race.
- Onset at an early age; early twenties and thirties

Incidence-(cases per 100,000 person years)

- UC – 2.2-14.3
- CD – 3.1-14.6

- 2 main types:
  - Ulcerative Colitis
  - Crohn's Disease
- Intestinal & extra intestinal manifestation

# Ulcerative Colitis

- Inflammation limited exclusively to the colon.
- May be limited to the rectum or involve the whole colon.
- Presents with:
  - Rectal bleeding
  - Urgency
  - Crampy abdominal pain

# Crohn's Disease

- Chronic debilitating inflammatory disease of gastrointestinal tract.
- Occurs anywhere from the mouth to anus.
- Presents with:
  - Bloody diarrhea
  - Abdominal pain
  - Fever and malaise
  - Weight loss and loss of appetite
  - Failure to thrive

# Extra-Intestinal manifestations

- Erythema Nodosum
- Pyoderma gangrenosum
- Uveitis and scleritis
- Sacro ileitis
- Peripheral arthritis
- ?Primary Sclerosing Cholangitis

# Diagnosis

- History-symptoms
- Radiological investigations-SBFT, CT enterography
- Endoscopy
- Histology
- Helpful blood tests
- Response to treatment

# Primary Sclerosing Cholangitis

- A disease of unknown cause
- Characterized by progressive inflammation, fibrosis and destruction of intrahepatic and extrahepatic bile ducts, which result in the development of cirrhosis
- No really effective medical therapy
- Liver transplantation only long term option

- 40-50% of patients when diagnosed are asymptomatic.
- Symptoms include:
  - Fatigue
  - Intense itching
  - Jaundice
  - Pain
  - Chills and fever

# Diagnosis

- Abnormal liver function tests
- Maybe transient, recurrent, fluctuating before persistent.
- Confirmed with ERCP/MRCP

# Association

- Smith and Loe first showed an association between PSC and IBD in 1965
- An association with CD was suggested by Atkinson and Carroll in 1964
- In both diseases genetic, immunologic and environmental factors are important in their causation

# Prevalence of IBD in PSC

- Wide global range of prevalence  
Percentage of PSC with IBD

- 21-23% in Japan
- 44% in Spain
- 50% in India
- 80% in Sweden
- 75% in U.S.A --87% have UC  
--13% have CD

- Percentage of IBD patients with PSC

UC 2.4-7.5%

CD 1.4-5.5%

# EFFECT OF SMOKING.

- PSC is more common in UC
- This may be due to the fact that smoking has a protective role in inflammation in both diseases.
- Inflammation in CD is made worse by smoking.
- PSC in CD is usually in non smokers

- IBD can be diagnosed at any time during course of PSC
- PSC can occur at any time during course of IBD
- In general IBD is diagnosed several years before PSC
- PSC may develop many years after total proctocolectomy for colitis

- IBD can develop many years after liver transplantation for advanced PSC.
- The 2 Diseases so interlinked that some people say it should be thought of as a variant of IBD...? PSC-IBD

*Loftus EV, Harewood GC et al. Gut 2005;54:91-6*

*Rabinovitz M, Gavalier JS et al. Hepatology 1990;11:7-11*

# PSC-IBD

- Rectal sparing and backwash ileitis
- Colitis was substantial with quiescent clinical course
- Male > female
- Present with abnormal LFTs as initial manifestation
- Both intra and extrahepatic duct involvement
- Higher risk of colorectal cancer

- Patients with IBD have an increased incidence of developing colon cancer.
- Cumulative probability of CRC
  - 3% after 10yrs
  - 8% after 20yrs
  - 18% after 30yrs

In USA -150,000 diagnosed with CRC  
-50,000 die each year

Influencing factors include severity  
and extent of colitis

F/H of CRC

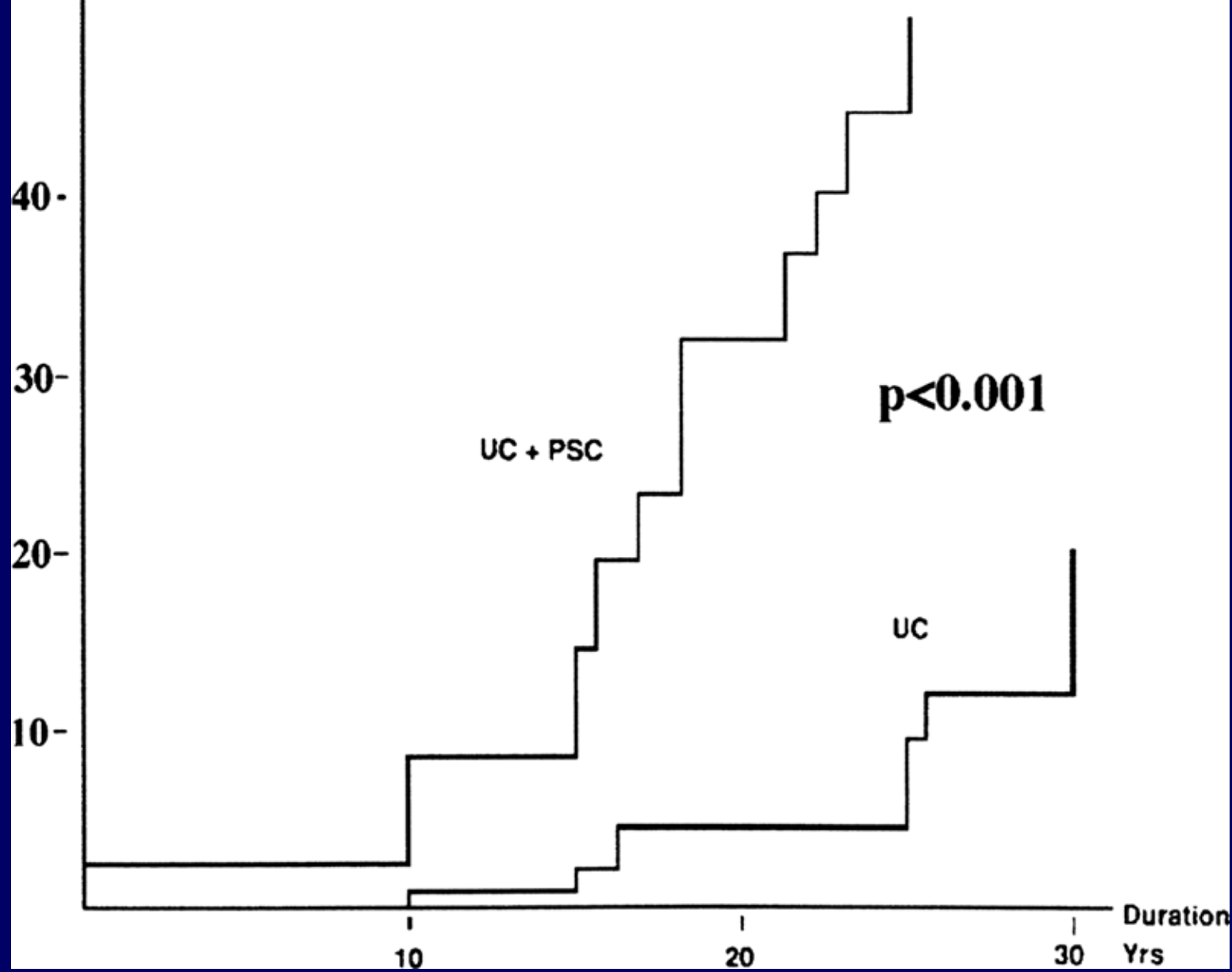
Duration of colitis

Presence of PSC.

	PSC/UC	UC alone
10yrs of disease	9%	2%
20yrs of disease	31%	5%
25yrs of disease	50%	10%

# Cumulative risk

(%)



**p<0.001**

UC + PSC

UC

Duration  
Yrs

- Time of diagnosis is usually driven by the awareness and diagnostic aggressiveness of individual doctor and patient when one of these 2 diseases is present.
- Early diagnosis can help to prevent complications, plan treatment and improve quality of life

# Patient with IBD

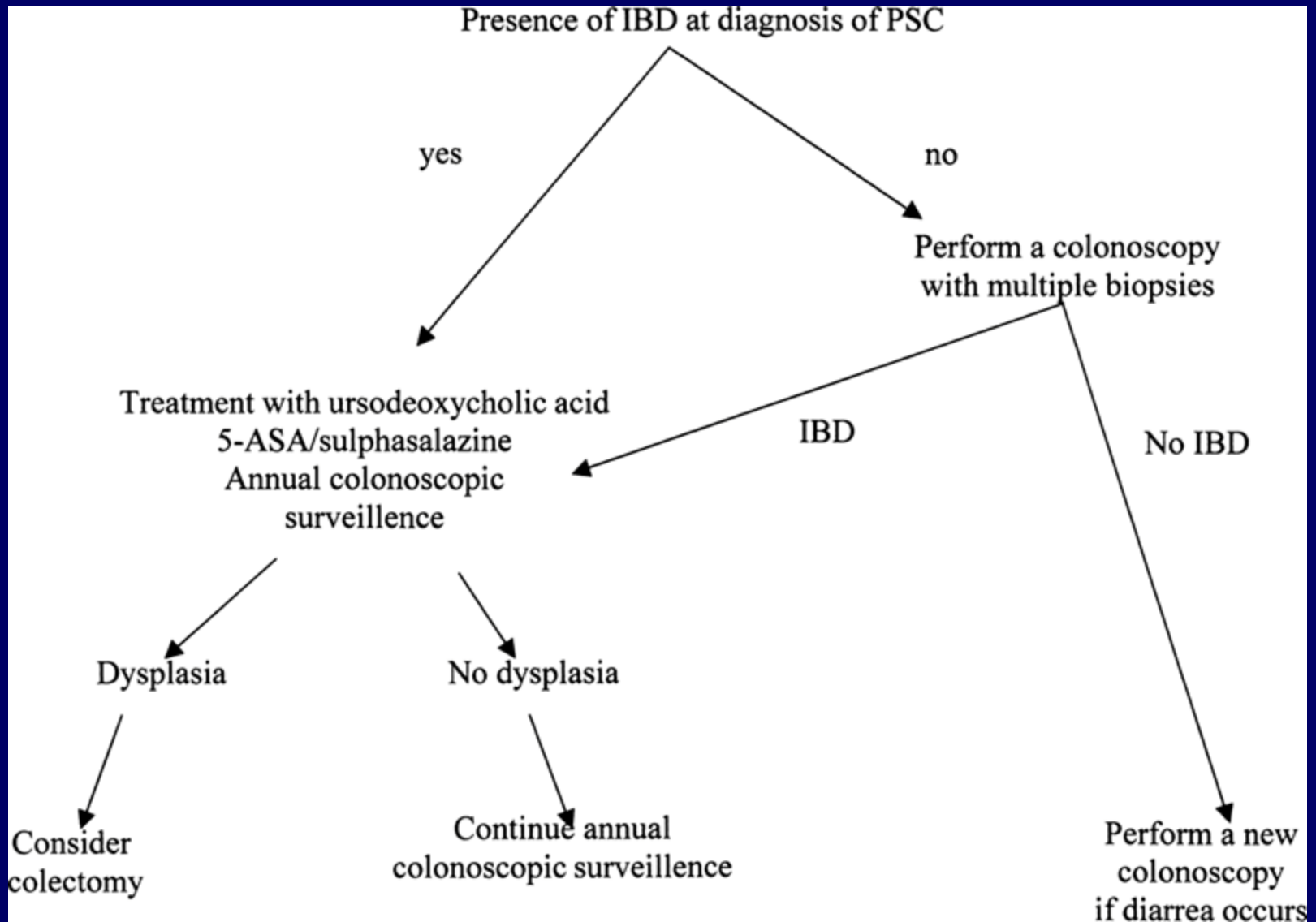
- Check LFTs every 3-6 months
- Abnormal LFTs ? ERCP/MRCP
- 1-2 yearly Ultrasound Scan
  - Look for perihepatic lymphadenopathy.
  - PPV OF 94% vs. 39% for serum indices

After colectomy still check LFTs esp if patient develops pouchitis

# Patient with PSC

- Begin colonoscopic surveillance once diagnosis of UC confirmed or established.
- Multiple biopsies and flow cytometry ? DNA aneuploidy which proceeds dysplasia
- If flow cytometry not available ? annual colonoscopy.
- If upper GI symptoms ? Upper endoscopy

- After liver transplant continue colonoscopic surveillance.
- A high incidence of colon cancer after liver transplant due to high immunosuppressive medication



# Effect of Treatment

- Treatment with Ursodeoxycolic acid decreases the risk of colorectal dysplasia in PSC-IBD.  
? Effect of bile salts
- Proctocolectomy for UC has little or no effect on the progression of PSC.
- Highly variable course of IBD after liver tx for PSC. One third improve, 1/3 remain stable and 1/3 get worse.

*Pardi DS et al. Gastroenterol 2003;124:889. Martin FM et al. Ann Surg 1990;212:551-6  
Maclean AR et al Dis Colon Rectum;200346:1124-8*

# Conclusion

- Unable to explain why and how the association of IBD and PSC occurs.
- Challenge of future is to determine not only the pathogenesis but also to discover how they interact with each other.
- This fascinating relationship between IBD and PSC requires a close and intense interaction between many different specialist to bring about an understanding of this complex entity