

The background features a warm, reddish-orange color palette. On the left, two hands are shown in a supportive grip. On the right, a cluster of hexagonal icons contains symbols for a clipboard, a heart rate monitor, a pill, a first aid kit, and test tubes. The entire scene is overlaid with a faint, white network of lines and nodes, suggesting a medical or technological theme.

Extrahepatic Manifestations and Quality of Life in Hepatitis B

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Hepatitis B: Extrahepatic manifestations

- 1-10% of HBV-infected patients
- Unclear pathogenesis
 - Likely immune complex mediated injury

Hepatitis B: Extrahepatic Manifestations

- Serum-sickness-like illness
- Acute necrotizing vasculitis
 - Polyarteritis nodosa
- Membranous glomerulonephritis
- Papular acrodermatitis of childhood
 - Gianotti-Crosti syndrome

Serum-Sickness-like Syndrome

- Occurs in the setting of acute HBV
- Immune complexes activate complement pathways leading to complement mediated injury
 - Low complement levels
 - High level circulating immune complexes containing HBV antigens and complement components
- Clinical features
 - Fever
 - Skin Rash
 - Polyarteritis
- Symptoms resolve with disease resolution

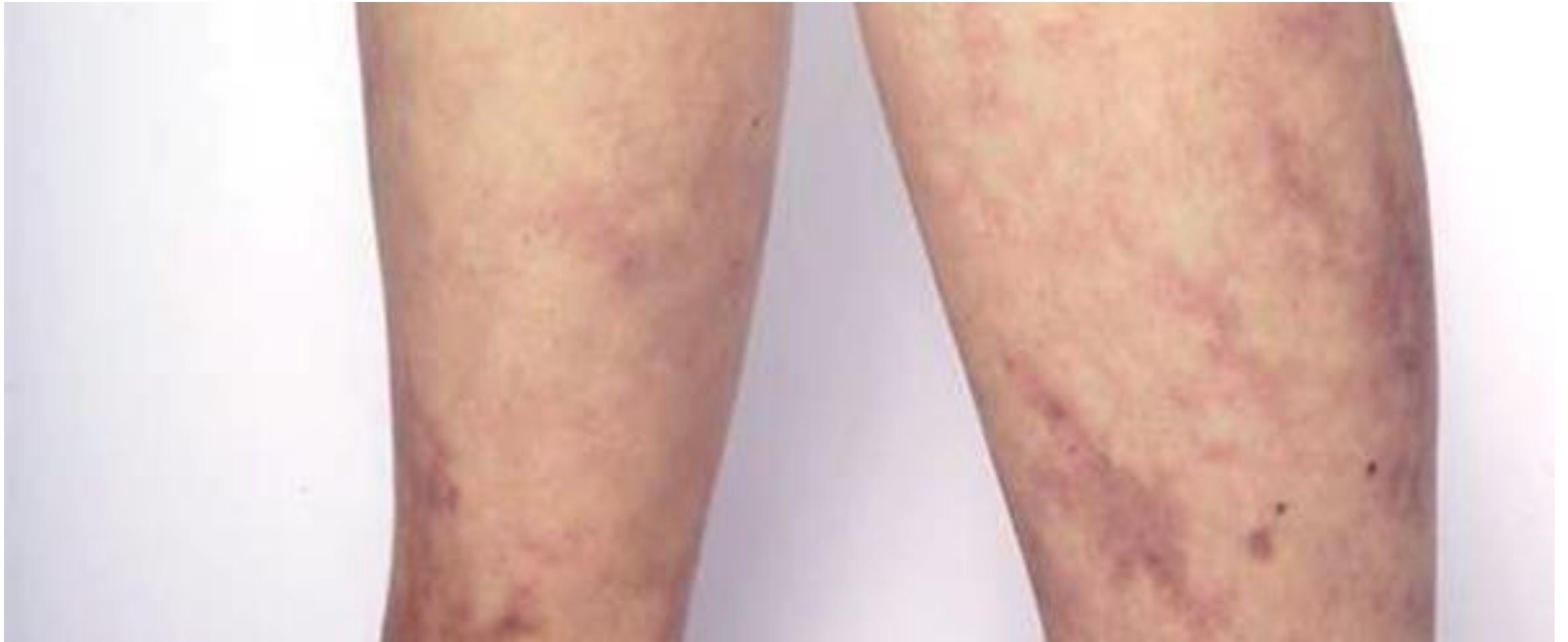
Acute Necrotizing Vasculitis – Polyarteritis Nodosa

- 30-50% with PAN have HBV
- Immune mediated injury to large, medium and small vessels
- Clinical features
 - Constitutional symptoms
 - Fever
 - Anemia
 - Leukocytosis

Acute Necrotizing Vasculitis- Polyarteritis nodosa

- Multi-system involvement
 - Arthritis
 - Renal – proteinuria, hematuria
 - Heart disease – pericarditis, CHF
 - HTN
 - GI – acute abdominal pain, GI bleeding)
 - Skin – vasculitic lesions
 - Neurologic – mononeuritis multiplex, CNS abnormalities

Livedo Racemosa of PAN



Acute Necrotizing Vasculitis – Polyarteritis nodosa

- Mortality rate of 30% at 5 years if untreated
- Treatment
 - High dose corticosteroids
 - Cyclophosphamide
- Maintenance
 - Azathioprine
 - MTX

HBV and Kidney Disease

A decorative header image showing a close-up, microscopic view of red blood cells. The cells are spherical and have a bumpy, textured surface, appearing in shades of red and pink. They are arranged in a cluster, filling the top portion of the slide.

- Occurs 0.1 - 25%
- Most common presentation is nephrotic syndrome
- Membranous GN
 - Predominantly male children
 - In adults, usually ages 30-50
 - Progressive renal failure occurs in ~50% of adults
 - Resolution occurs with hepatitis B e Ag seroconversion
 - Pathophysiology
 - Immune complex deposition within basement membrane triggering a complement response

HBV-associated Nephropathy



- More common in children
- Membranous glomerulonephritis most common
- 30-60% of children have spontaneous remission
 - Occurs with eAg seroconversion
- 30% progress to renal failure
 - 10% requiring dialysis or renal transplant

HBV and Kidney Disease



- **Membranoproliferative GN**
 - Involves basement membrane and mesangium
 - Marked mesangial and capillary wall deposition of HBsAg
- **IgA Nephropathy**
 - Develops with concomitant IgG subepithelial deposits
 - Usually resolves
 - Progression to CRF usually slow and progressive if HBV does not resolve

Papular Acrodermatitis (Gianotti-Crosti Syndrome)

- Maculopapular
- Erythematous
- Non-pruritic
- Involves face and extremities
- Generalized lymphadenopathy and hepatomegaly
- Lasts 15-20 days
 - Precedes or follows development of jaundice



Conditions with a poorly defined HBV Association

- Essential mixed cryoglobulinemia
- Aplastic anemia

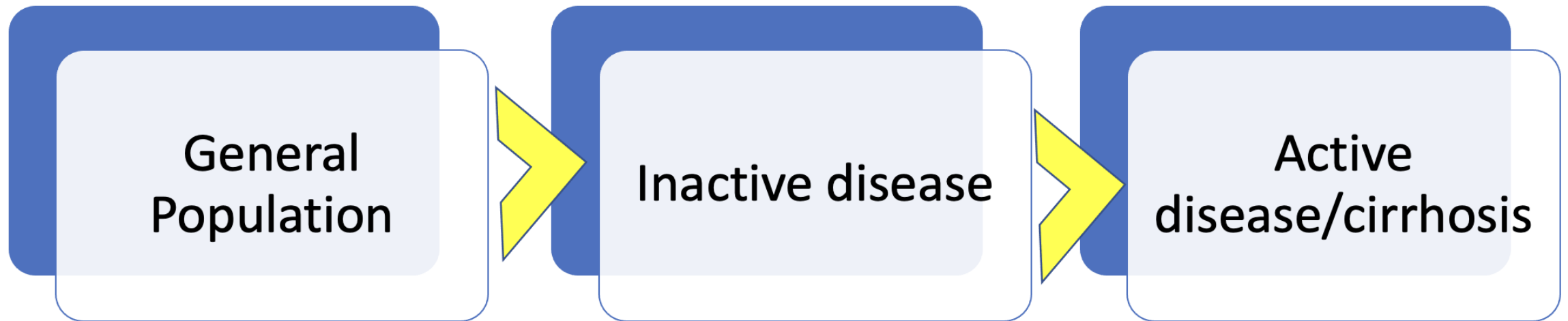
Extrahepatic Manifestations of HBV Infection

Syndrome	Manifestations
Serum sickness-like syndrome	Fever, erythematous rash, myalgia, arthralgia, fatigue/malaise
Glomerulonephritis	Membranous GN, MPGN, IgA mediated nephropathy
Polyarthrititis	Acute and symmetric inflammation, morning stiffness
PAN	Necrotizing vasculitis, fever, weakness, loss of weight, appetite
Dermatological Conditions	Bullous pemphigoid, lichen planus, Gianotti-Crosti syndrome
Rheumatologic	Raynaud's, arthritis, sicca syndrome
Neurological/psychological	Guillain-Barre, depression, psychosis

EASL Practice Recommendations

Recommendation	Grade of Evidence	Grade of Recommendation
Patients with replicative HBV infection and extrahepatic manifestations should receive antiviral treatment with NAs	II-2	1
PegIFN α should not be administered in patients with immune-related extrahepatic manifestations	III	1

HBV and Quality of Life



QoL Instruments used in HBV

- **WHOQOL-BREF**
 - 26 questions
 - 5 domains
 - 5 Likert style response scales
- **WHOQOL – 100**
 - 100 questions
- **Illness Behavior Questionnaire**
 - Self assessment tool exploring attitudes, ideas, and feelings of the patient regarding their illness

HBV and Quality of Life

- Study of 150 patients
 - ~ 50% develop psychiatric disease
- **Presence of psychiatric disorder associated with poorer QoL**
- General anxiety disorder ~ 20%
- Depression ~ 8%
 - Higher incidence of depression with chronic hepatitis

Impact on QoL in Chinese HBV Patients

- **Positive (Improve QoL)**
 - Higher education levels (college and above)
- **Negative**
 - **Depression**
 - **Anxiety**
 - **Stigma***
 - **Disclosure of HBV infection**
 - Spouse
 - Co-workers

* Frequently experienced among Asian immigrants in high income countries

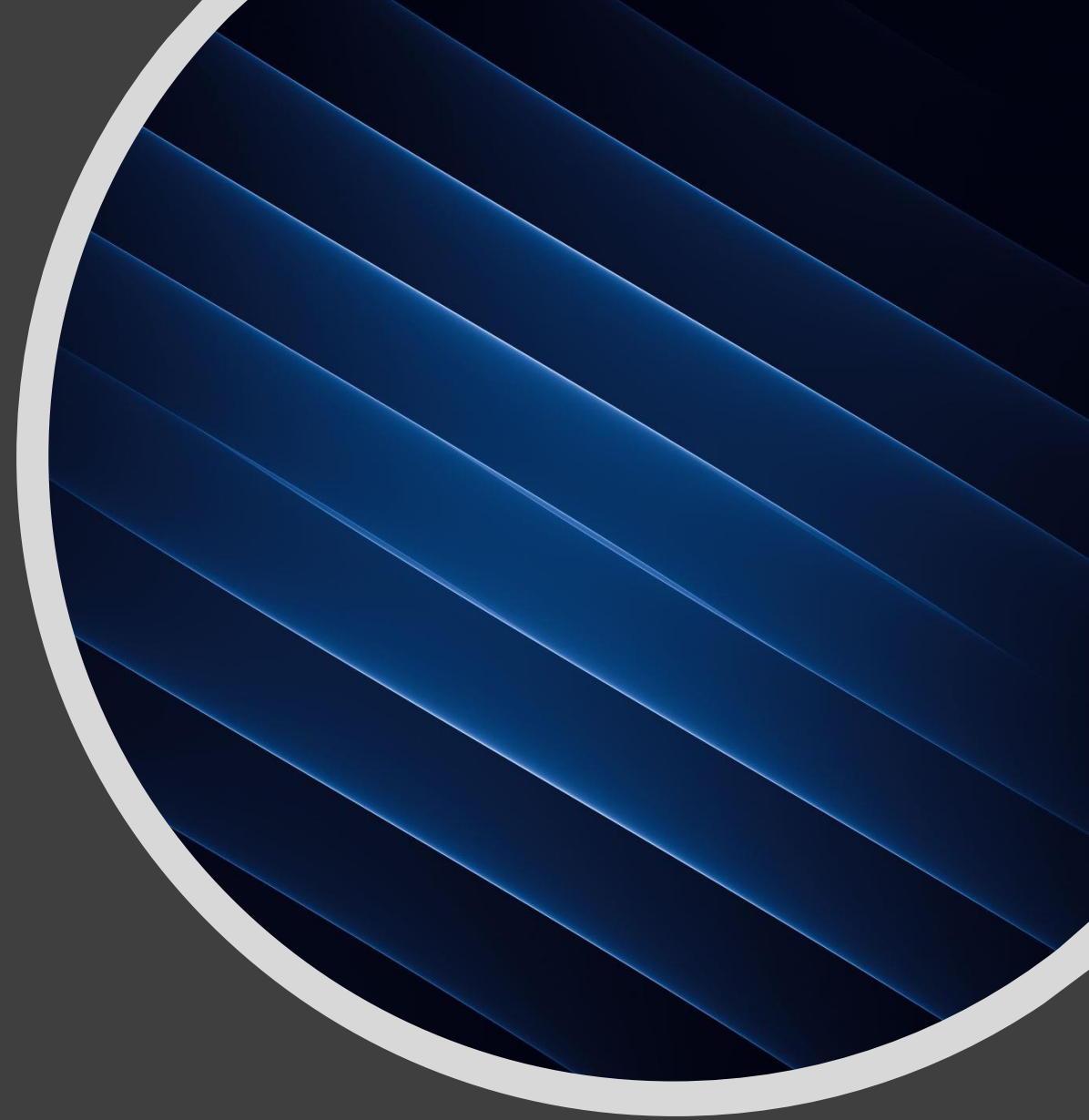
QoL in Pediatric Patients with HBV in the US and Canada

Overall, QoL preserved in children with HBV

Increased ALT in young children negatively associated with poorer psychosocial functioning

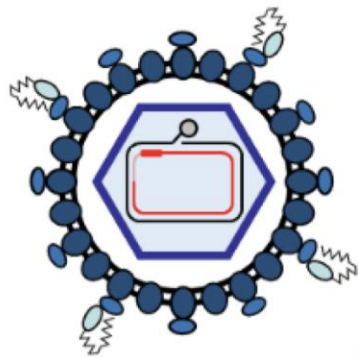
Higher maternal education associated with higher physical functioning and better general health

Older children (ages 5-18) reported increased rates of sadness and depression



HBV and QoL: Inactive disease vs. anti-viral suppressed subjects

- Both groups showed a decrease in overall QoL in all analyzed domains
- No significant differences between the 2 groups on HRQoL assessments
- Anxiety, sleep disturbances and hostility correlated with decreased QoL
- Patients taking anti-viral therapy had less anxiety and sleep disturbances than untreated, inactive patients



Primary impacts

- Fear of disease progression
- Financial loss
- Fear of infecting others



Secondary impacts

Stigma and discrimination from:

- Community
- Health-care providers
- Institutions (e.g. businesses, educators, governments)



Tertiary impacts

- Silence and loneliness
- Withdrawal from society
- Self-stigma and guilt
- Passivity

Chronic HBV and QoL – Key Points

- The impact of CHB is much broader and greater than the physical disease itself
- Larger proportion of people with CHB are affected by the associated psychosocial burden than by the physical symptoms
- Psychological health programs needed for people with CHB