



Viral Hepatitis and Children

California Health Policy Forum

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HCV in Children

- Seroprevalence in US: 0.2% in <12 yo; 0.4% in 12 to 19
- Estimated 240,000 children exposed/infected in US
- Prior to 1992, blood products important source
- Now vertical transmission, IV drug use, or high risk behavior, blood products in areas with poor screening, large group unidentified
- Most are asymptomatic during children; later disease progression, liver failure, HCC

HCV Pediatric Therapy: Approved for ≥ 3 years

■ Peginterferon alfa 2b (PEGIntron)

- Schering
- pegylated interferon alfa-2b
- 12 kDa linear PEG
- Maximum concentration 20 hours
- Depression, neutropenia, thrombocytopenia, thyroid dysfunction, rare: hearing, eye, renal, pulmonary, autoimmune side effects

■ Ribavirin (Rebetol)

- Schering
- 15 mg/kg
- Anemia



Goals of Therapy at CHRCO

- Obtain SVR
- Prevent Progression to Cirrhosis
- Improve Quality of Life
- Reduce Risk of HCC
- Reduce Risk of Transmission
- Do Minimal Harm

HCV at CHRCO 2000 - 2010

- 44 patients

- 27 treated: Genotype 1: 12 Genotype 2/3: 13
- 17 not treated: Genotype 1: 6 Genotype 2/3: 1
- Genotype unknown: 10

- Race/Ethnicity/Region:

- Asian – 7
- African – 7
- Middle Eastern – 4
- Hispanic – 6
- White – 20

HCV Treatment 2000 - 2010

- 27 patients treated
 - 20 “cure” SVR: GT 1: 7 GT 2/3: 13
 - 5 had relapse or did not respond: all GT 1
 - 2 patients currently on tx (GT 1)
 - 1 patient stopped after 1 dose, severe reaction GT 3

- 2 patients co-infected with HIV
 - 1 achieved SVR
 - 1 non responder, stopped tx at 16 weeks

- Sustained Viral Response: 80%
 - GT1: 58%
 - GT 2/3: 100%

HCV Treated Population at CHRCO

- The route of transmission:
 - Perinatal Transmission 10
 - Blood Transfusion 10
 - IV Drug use/Sexual 3
 - Unknown 4

- Genotype (where known)
 - Genotype 1 13
 - Genotype 2/3 14



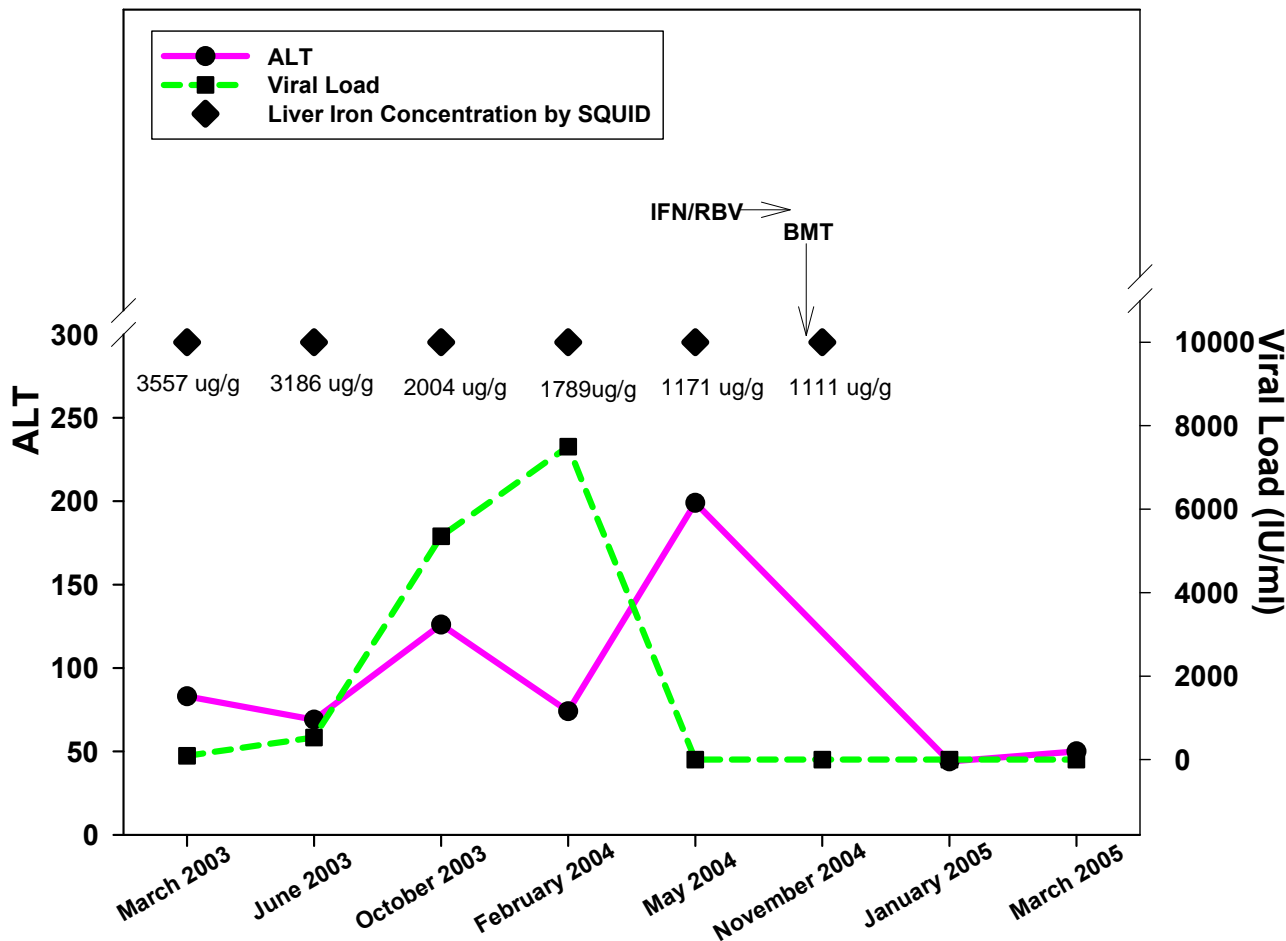
HCV CHRCO Not Treated

- 17 patients
 - Too young - 4 waiting to get older to treat
 - Refused treatment - 3
 - HIV or SC and waiting to tx later - 4
 - Unstable family - 4
 - Lost to FU or transfer to adult care - 2

4 yo Transfusion Acquired HCV

- Pakistani girl with Thalassemia
- In US for BMT: sib did not match
- Returned to Pakistan, required transfusions
- + HCV after transfusions, Genotype 2
- New sib a match
- Returned to US for BMT

BMT in 4 yo Patient with HCV and Thalassemia



TREATMENTS

- 1) Ribavirin alone
- 2) Iron chelation
- 3) Intron and RBV
- 4) BMT successful

HBV Infection in Children

- Incidence of acute pediatric cases has declined (by 98%) after universal infant vaccination 1991
- Chronic HBV still substantial problem
 - Vertical transmission—even after immunoprophylaxis and vaccination in newborn (5%)
 - Immigration from endemic region
 - Infection from infected household contact
- Most infections in infants become chronic

From: Haber B et al, Pediatrics 2009

HBV Followed at CHRCO 2000 to 2010

- Followed 55 patients
- 45 currently not on treatment (8 previously treated)
- 10 presently on treatment: lamivudine/adefovir or entecavir/adefovir
- Region/Ethnicity:
 - Asian - 44
 - African - 8
 - Russian (White) - 2
 - White - 1
- 6 patients participated in clinical trials: lamivudine (GSK), adefovir (Gilead), tenofovir (Gilead)

HBV Case: PC

- 20 yo SE Asian male vertical transmission of HBV
- 2002 age 11 years; liver bx showed cirrhosis: Grade 2, Stage 4
- 2002 treated LAM: 100 mg, 1 year, + DNA, tx stopped
- 2003 - 2005 Adefovir: 10 mg; Cont + DNA; tx stopped
- 2006 switch to Entecavir 0.5mg, DNA low (375 copies/ml)
- 2006 Increased Entecavir 1 mg cont + DNA (83 copies/ml)
- 2007 add ADF 10mg
- 2008 **virus NOT DETECTABLE**; Liver bx Grade 0 Stage 2
- 2008-2009 Negative HBV DNA
- 2010 Breakthrough + DNA (1020 copies/ml) Insurance problems missed doses
- Problems resolved; Labs pending

PROBABLY LIFETIME THERAPY