IVRN Specimen Collections

HIV

The CD8 rescue collection: Stored peripheral blood mononuclear cells (PBMC) and plasma collected at multiple timepoints over a span of 5 years (1992 –1996) are available from HIV-infected individuals. All subjects have multiple longitudinally collected vials of plasma as well as separated CD4+, and CD8+ cells (~5-10x10_6 cells/vial separated by Dynabeads). The subjects span the spectrum of HIV management from being anti-retroviral naïve and clinically stable through to rapid progressors who have received multiple HAART regimens over the time period. For each subject at each sampling point, the clinical status and T cell counts are available.

The STEAL study: This Kirby Institute-coordinated clinical trial evaluated the safety and efficacy of simplified dual-NRTI-based antiretroviral therapy with either once-daily ABC-3TC fixed dose combination or once-daily TDF-FTC fixed dose combination in HIV-infected adults who received two NRTIs as part of suppressive antiretroviral therapy. Serum, plasma and PBMC samples for IVRN studies were collected from 50 subjects (25 from each arm) at baseline, 12, 24, 48, 72 and 96 week timepoints. For each subject at each sampling point, the clinical status, T cell counts and viral load data are available.

ESPRIT: This was a randomised, open-label, phase III, international study of subcutaneous recombinant interleukin-2 (SC rIL-2) in patients with HIV-1 infection and CD4 lymphocyte counts greater than or equal to 300 cells/mm3: Evaluation of Subcutaneous Proleukin in a Randomised International Trial (ESPRIT). A total of 4150 patients were randomised to receive either intermittent SC rIL-2 therapy in combination with antiretroviral therapy or antiretroviral therapy alone, including 205 patients from Australia. There were 3 dosing cycles of rIL-2 in the first 6 months of the study; thereafter further dosing was guided by the CD4+ T-cell goal. All patients were followed up on the study for 5+ years. Serum, plasma and PBMC samples were stored annually from approximately 1500 patients. Access to the samples and associated clinical data may be sought via preparation of a concept sheet. The IVRN will facilitate review by be the INSIGHT Executive Committee (which oversees the repository) for approval.

Melbourne HIV cohort: A longitudinal case-control specimen set including sera, plasma and PBMCs from HIV-infected, or uninfected, men-who-have-sex-with men (MSM) is available from this prospective cohort (n=34 HIV infected subjects and n=34 uninfected control subjects each with an average of 3-4 sampling points collected over several years. The primary focus of the study is to examine metabolic parameters, hence the associated clinical dataset socio-demographic factors, as well as repeated measures of ECG, carotid intimal medial thickening, and DEXA bone mineral density scanning as well as cardiovascular events.

ARCBS repository:

J. Sullivan and W. Dyer collected and maintained DNA, PBMC and plasma specimen banks for HIV and HCV natural history, treatment and vaccine studies since 1994, starting with the Sydney Blood Bank Cohort (SBBC) and other LTNP and slow progressors with transfusion-acquired HIV (TAHIV) infection. This also included HIV+ comparator cohorts ranging from LTNP to rapid progressors. Between 1996 and 2003, antiretroviral therapy (ART) treatment cohorts have been collected (mainly

from Dr Cassy Workman's practice), with serial samples from ART-naïve patients commencing ART with acute or chronic HIV infection. Baseline (ART-naïve) specimens are available for most individuals. Most specimen sets have corresponding clinical data, including T cell counts and viral load, ART regimen where relevant, with host genetic data (HLA and chemokine receptor polymorphisms) available for many according to demand from individual studies.

Studies using this repository have included analysis of host genetic and immune factors involved in non-progression in ART-naïve individuals, the effect of HAART on antiviral immune responses, the effect of HAART on viral quasispecies compartmentalisation, changes in receptor usage, and viral fitness. These treatment cohorts may be used to address questions on long-term ART treatment, and may act as comparator cohorts for new therapy strategies.

Patient groups in the repository:

1. HCV-positive: Buffy coat PBMC aliquots from HCV+ donors detected during blood screening, and of HIV/HCV dual infected individuals from Dr Cassy Workman's practice.
Available resources- Plasma, PBMC, genotyping, VL.

2. Transfusion-acquired HIV+ LTNP, including the SBBC, other LTNP and slow progressors: Serial specimens from the SBBC (n=7) and other LTNP (n=7) and slow progressors (n=19) with TAHIV infection. Comparator groups include age, sex, transfused matched HIV-neg individuals, and LTNP and slow progressors with sexually-acquired HIV infection.
Available resources- ACD plasma, PBMC, CD4, CD8, VL, demographics, genetic factors.

3. HIV-pos Haemophiliac cohort: Sequential specimens (3-4 visits) collected from 50 individuals over a 2-3 year period, most on ART.
Available resources- ACD plasma, PBMC, CD4, CD8, VL, demographics, genetic factors.

4. ART-naïve HIV+ patients commencing ART- seroconverters and established infection: Serial ART treatment cohorts (long-term follow-up >12 months), commencing ART with either acute (n=38) or chronic (n=43) HIV infection (also an additional 14 patients with 12 months follow-up). Sequential specimens are also available from a number of HIV-neg individuals whose partners seroconverted, and some of these were immediately treated for a short time until confirmed seronegative (n=17).
Available resources- ACD & EDTA plasma, serum, PBMC, CD4, CD8, VL, genetic factors.

5. Boosted HAART: Patients with stable virologic response to ART switching from single PI (or non-PI) to dual PI regimens (RTV/IDV study).
Available resources- ACD & EDTA plasma, PBMC, CD4, CD8, VL, genetic factors.

6. Induction/maintenance study: Patients on dual PI regimens with VL <50 copies/ml at baseline changing to a dual protease inhibitor regimen without nucleoside analogues.
Available resources- ACD & EDTA plasma, PBMC, CD4, CD8, VL, genetic factors.

7. Miscellaneous HIV+ patients: specimens collected from ART-failed patients for viral resistance studies, HIV/HCV coinfection, HIV-exposed seronegative patients for host resistance studies, and other patients of interest, eg. HIV+ with homozygous CCR5 Δ32 genotype (patient P164). Many of these misc. patients do not have clinical data available.

8. PHISAS study: Patients with early acute HIV infection starting a single dose daily ART regimen (n=16).
Available resources- ACD plasma, PBMC, CD4, CD8, VL

9. DNA bank: genomic DNA from patients in groups 2 - 7
Available resources- quantified DNA, complete demographic details collected by Dr Cassy Workman for the CCR5/CCR2 meta-analysis (Ioannides et al, Ann. Int. Med. 2001, 135:782-795*).*
For further details, please contact Wayne Dyer; ivrnqap@sharkdentist.com.au

HCV

The ATAHC-I study:

This was a prospective, non-randomised, dual arm longitudinal cohort study of individuals with newly acquired HCV infection who either opted to undergo treatment for 24 weeks with pegylated interferon-α or remain untreated. Plasma and PBMC samples for IVRN studies are available in the treatment arm at baseline, 4, 8, 12 and 24 weeks and then at 12 and 24 months. More limited specimen sets are available for untreated subjects. For each subject at each sampling point, the ALT and viral load data are available. Access to these samples is feasible via by preparation of a concept sheet. The IVRN will facilitate review by the ATAHC Protocol Steering Committee (which oversees the repository) for approval.

The Prince of Wales HCV collection:

Longitudinally collected PBMC and serum samples stored by IVRN are available from a matched cohort of patients with genotype 1 or 3 HCV infection who received combination therapy with interferon-α and ribavirin and achieved a sustained virological response (n=10) or were non-responders (n=9). The sample sets include baseline and 3-6 monthly intervals thereafter. For each subject the histopathological data from the pre-treatment liver biopsy and the on-treatment ALT is available. Access to these specimens can be made by application to the IVRN Steering Committee or via application through the ACH^2 expression-of-interest (EOI) grant process.

Co-infection

HIV/HBV:

Samples were stored by IVRN from an NIH-funded longitudinal cohort study of HIV/HBV co-infection in individuals receiving HBV-active HAART. PBMC samples are available from 60 subjects at 0, 6, 12, 18, 24, 30 and 36 month timepoints. For each subject at each sampling point, the ALT and HBV DNA loads are available, as well as the T cell counts and HIV viral load data. Access to these specimens can be made by application to the IVRN Steering Committee or via application through the ACH^2 expression-of-interest (EOI) grant process.

HIV/HCV:
Samples were stored by IVRN from 10 subjects with HIV/HCV co-infection commencing cART treatment. Serum, plasma, and PBMC samples were collected at week 0 (before commencement of cART), week 2, 4, 8, 12, 24. For each subject at each sampling point, the ALT and HCV viral loads are available, as well as the T cell counts and HIV viral load data. Access to these specimens can be made by application to the IVRN Steering Committee or via application through the ACH^2 expression-of-interest (EOI) grant process.

Data
Clinical and laboratory data on individual specimens within each of the IVRN-held collections is stored in the Blood and Tissue Samples Inventory System (BATSIS) database, which is managed by IVRN. Read-only access to BATSIS to view specimen details can be arranged upon request to the IVRN Project Coordinator.