AWACC 2009

HIV Case Study
Dr KR Gate
Dr H Sunpath
McCord’s Hospital Medical Department
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Patient Summary

- 39yo HIV positive man
- 2/52 history of productive cough, constitutional symptoms and a headache
- 1/7 Hx of confusion
- No substance abuse but history of herbal meds
- Stable vitals except for hypothermia mild tachypnoea
- Mild respiratory distress with bibasal course creps, hepatomegally and doughy abdomen
Initial Lab Results

- Hb 7.6 g/L
- WBC 6.30 10^9/L
- PLT 135 10^9/L
- HCT 22.200 L/L
- Normochromic normocytic anaemia
### Initial Lab Results

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No LDH available
Initial Lab Results

- **Toxo IgG**  Negative
- **CSF** – No abnormalities
- **CD4**  51 Abs
  - **CD4%**  4.0%
- **ESR**  80mm/hr
CXR

- Diffuse bilat interstitial infiltrate, with mild widening of mediastinum and focal areas of consolidation in Lt lower lobe.
Initial Diagnosis

- RVD with severe immunosuppression
- LRTI with possible underlying PTB; disseminated TB
- Renal impairment cause to be established

- IV fluids, IV Augmentin, oral Doxycycline, Bactrim prophylaxis and multivitamin
Day 1

- Pt thought to be clinically septic (tachycardic, hypotensive BP80/50, spiking temps of 38 degrees C, occasional episodes of hypothermia, tachypnoeic with RR 28, worsening neurological status GCS 13/15
- Urea 20, Creat 170, Na 129, K+ 4.0, Cl 104, Bicarb 14
- Hb 7.0, WCC 1.91 (Neutropenic & Lymphopenic), Plts 25
- Smear showed polychromasia, target cells, anisocytosis, burr cells and confirmed pancytopenia
- INR 1.6  PTT 45 (27-43)
- Coomb’s Negative
- Blood cultures drawn, antibiotics changed to Ceftriaxone 1g bd, fluids increased to 6hrly
- Due to patient’s presenting history, rapid clinical deterioration, CXR possibly suggestive of TB and probably also as a frustrating last ditch effort – TB treatment was commenced
Day 2

- Pt had improved slightly – GCS14/15 (attempting to get out of bed), BP 90/70, PR 90, still spiking temps with intermittent episodes of temps <35 but trend seemed to be responsive to AB’s
- Hb 7.0, WCC 4.0 (still neutro- and lymphopaenia, eosinophils raised), Plts 134
- INR 2.29
- Urea 26, Creat 220, Na 133, K+ 5.2, Cl 108, Bicarb 13
- Urine output 1.2 litres in last 24hours, urine still very concentrated
- Pt sedated and fluids increased to 4hrly NaCl 0.9%
Day 3

- Pt clinically deteriorating, GCS 10/15
- Had received 5 litres of fluid in last 24hrs with good urine output
- Temp showing gradual response to treatment
- Urea 26, Creat 240, Na 135, K+ 4.9, Cl 113, Bicarb 11
- Hb 7.9, WCC 5.4 (Now only lymphopaenic), Plts 112
- Tbili 82, Dbili 56.8, ALP 395, GGT 148, ALT 61, AST 207, ALB 12, LDH 1399
- INR 2.31
- ABG pH 7.27, HCO3 13.7, BE -11
- Preliminary blood culture results – No growth
- Transferred to HCU
Day 3 HCU

- On arrival in HCU patient found to have PR105, BP100/60, Temp 36, RR 37
- CVP = 10, urine output about 50ml/hr
- Abdomen severely distended with ascites, mild anasarca noted
- Assessment made: Severe immune compromise
  - Disseminated TB
  - Neutropenic sepsis (possible Gram Negative sepsis)
  - ?DIC (full DIC screen not done) ?TTP (haemolysis, thrombocytopenia, ARF, Pyrexia, neurological deterioration)

- Hypoalbuminaemia,
- Supportive fluid management and IV AB’s continued
Day 4 & 5

- Pt deteriorating clinically
- GCS 5/15 with severe neck stiffness
- Still very acidotic clinically, anasarca worsening, course creps bilat on auscultation of chest
- Hb 7.2, WCC 6.9, Plts 29
- Urea 26.6, Creat 229
- LFT’s ISQ
- INR 1.81
- ABG pH 7.2, HCO3 13
- LP not repeated due to low platelets
- Blood cultures - No growth
- Prognosis extremely guarded at this stage and family called in in preparation of “inevitable”
- Hydrocortisone started for thrombocytopaenia.
Day 6

- Pt looking slightly better
- GCS improved to 8/15
- Vitals stable, good urine output
- ABG pH $7.32$, HCO$_3$ 15
- Hb 6.4, WCC 6.6, Plts 86
- LFT’s stable with only Tbili improving to 31 and LDH down to 821
- INR 1.88
- Urea 26, Creat 204, Bicarb 15
Day 7

- GCS 9/15
- Vitals stable
- Still very swollen with abd distension, chest sounding slightly better
- Hb 5.4, WCC 7.59, Plts 41
- INR 1.57
- Urea 22.3, Creat 182, Bicarb 15
- LFT’s ISQ
- Transfused 2U packed cells
Day 8 & 9

- GCS 12/15 Pt now very restless and difficult to manage, kept sedated
- Hb 7.2, Plts 49
- LFT’s remained unchanged except for Alb improved to 16
- INR 1.5
Day 10

- GCS still 12/15 (pt however sedated)
- Vitals stable
- Hb 6.7, WCC 8.82, Plts 37
- Urea 13, Creat 155 Na 155, K+ 2.8 Bicarb 22
- Ceftriaxone stopped, oral Slow K started
Day 11

- Pt ISQ but now spiking temps again
- Concern about nosocomial infection therefore all lines removed and sent for MC&S, blood cultures repeated
- Augmentin and Flagyl started
Day 12

- Pt doing very well
- Temp responded to AB’s, GCS now at 15/15, patient feeding himself, responding appropriately but still very weak
- Staph Aureus cultured on urinary catheter sensitive to Augmentin
- Hb 5.1, Plts 58 Pt transfused another 2u packed cells
- Other blood parameters K+ now at 2.1, Mg 0.5, Phosphate 0.49 – Corrected with IV KCL, Slow Mag and Sandoz Phosphate – Probable refeeding syndrome with patient taking own feeds.
- ARV therapy initiated due to thrombocytopenia (Regime 1a)
Day 13

- Pt convulsed once in evening. Sent for CT scan head – NAD
- Still battling to correct electrolytes
- Urea 3.0, Creat 66, Bicarb 25
- Mg 0.38, Corrected Ca 1.68, Phosphate 0.58
- IV KCL needed again, Mg and phosphate supplements increased, IV Mag Sulph and Ca Gluconate given
- Electrolyte deficiency probably cause of convulsion
- Pt recovered fully from convulsion with above therapy and CMP and K+ normalized with supplementation over next 3 days
Day 15 - 21

- Pt continued to do well on ARV’s
- Eventually discharged home on day 21
- Mobilizing independently, GCS 15/15, no more convulsions
- Hb 9.0, WCC 5.6, Plts 102
- Urea 5.1, Creat 66, Na 133, K+4.1, Bicarb 24
- INR 1.2
- CMP – normal
- Tbili 30, ALP 680, GGT 504, ALT 42, AST 91, ALB 16, LDH 1280
- TTO – Bactrim 2tabs dly, Rifafour 4tabs dly, Pyridoxine 25mg dly, Prednisone 10mg dly for 1/12, 3TC 150mg bd, D4T 30mg bd, EFV 600mg nocte
Pt reports feeling weak, recently started with severe nights and losing weight again
Tachycardic with PR @120, BP 100/60, Apyrexial, no resp distress
+++Oral candida
chest clear, A/E = bilat
Abd - Tender epigastrium and LUQ, palpable hepatomegally of 5cm BCM
?palpable mesenteric LN
Abd US showed abd LN and cavitating abd mass (?LN)
Lfts show worsening cholangiopathic/infiltrative picture.
Assessment of possible TB IRIS made and patient readmitted
Days 1-7 Readmission

- CT abdomen done which showed hepatic and splenic granulomas, numerous abd LN with some showing evidence of central necrosis.
- Pt started on IV hydrocortisone and responded very well
- Fluconazole started for presumed oesophageal candidiasis
- Abd pain improved, night sweats ceased and patient started gaining weight again.
- However liver functions continued to deteriorate slowly as shown:
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Due to infiltrative/cholangiopathic picture slowly starting to convert to a hepatocellular damage picture decision made to switch patient to a liver friendly regime

- Pt improved clinically, LFT’s remained stable and did not deteriorate further
- Pt discharged on 7 readmission
2/12 on ARV’s

- Doing very well. Reports feeling good, gained 10kg of since last discharge.
- No constitutional symptoms, good appetite, no abd pain
- Hb 9.8, WCC 7.2, Plts 273, INR 1.1
- Urea 4.5, Creat 61, Na 134, K+ 4.5
- Tbili 13, ALP 1461, GGT 1324, ALT 83, AST 163, Tprot 83, Alb 23, LDH800
- Currently on Ethambutol 1.2g dly, Rifampicin 600mg dly, INH 300mg dly, Pyridoxine 25mg dly
- 3TC, D4T, EFV, Bactrim (prophylaxis) and Multivites
Summary

- 39yo man with CD4 of 51
- Presented with neutropenic sepsis and signs of disseminated TB
- Whilst in hospital patient developed signs in keeping with TTP (Fever, neurological deterioration, thrombocytopenia and haemolysis, acute renal failure) but unfortunately not confirmed ?was it all DIC
- The above was treated with IV Ceftriaxone, TB treatment, supportive fluid therapy and steroids.
- Initiated on ARV’s on Day 12 of hospital stay.
Eventually discharged on TB treatment, ARV’s and low dose steroids

Patient then readmitted with Abd TB IRIS and concern about a coexisting drug induced hepatitis

ARV’s continued, IV steroids started and patient switched to a liver friendly TB drug regime

Patient currently continues to recover nicely with gradually improving haematological, renal, electrolyte and hepatic functions.
In Closing

- We presented this case because of this relatively common scenario of a patient with HIV presenting critically ill and, in this patient’s case, spending a significant period of time in an ICU setting.

- Questions:
  - Differential diagnosis of thrombocytopenia in the setting of HIV?
  - What does the literature show concerning the place of the initiation of HAART in critically ill patients?
    Should we have waited before initiating ARV’s, did this contribute to his IRIS or did it hasten his recovery?
  - IRIS TB in patients on TB treatment, ARV’s and steroids?