Inf – ER Combined Meeting

R2吳志華
Supervisor VS洪世文
2012/04/21

Patient Data

Case :王XX
•30 y/o, male
•Date: 2012/xx/01, 09:41
•E3V4M6
•TPR: 35.8 /88/18 BP:無法配合
•SpO2: 96%
•檢傷主訴：全身虛弱/無力 吃不下 有AIDS
•Triage: 2

History

- Chief Complaint:意識改變
- 前天睡不著,吃FM2
- 今早意識改變
- 最近才出院,3/28門診用藥:
  - Batar 2# tid
  - Combivir 1#bid
  - Kaletra 2#bid
  - Compesolone1#bid

Past History

- Allergy: NKA
- HIV

Physical Examination

- Cons: E4V3M6
- Chest: Coarse BS
- Abdomen: soft,
- Cold sweating
- EOM:no limitation
- M.P >3

Impression:

- Acute delirium

Initial management

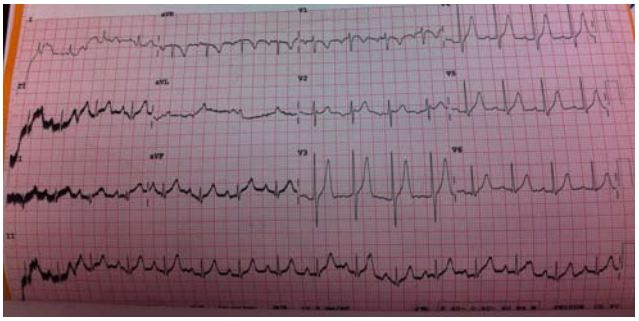
0945:

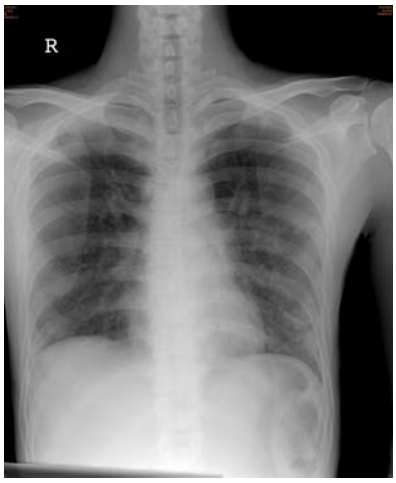
- F/S(71)
- CBC/DC/PLT
- BUN/Cr/NA/K/AST/NH3/iCa
- PT/aPTT
- N/S 80 cc/hr
- CXR
- EKG
- BP(136/88)
- Head CT
- Urine Toxic screen

1005:

D50W 2 amp IV st

EKG





Lab

PT	14.9	second	9.400	12.500	*H
Normal control	10.5	second			
INR	1.43	Ratio	0.800	1.200	*H
APTT	34.1	second	28.600	38.600	
Normal control	32.8	second			

Lab

CBC/Platelet/DC	**********				
WBC	12.0	X1000/ul	3.800	10.000	*H
RBC	5.55	million	4.500	5.700	
Hb	16.7	gm/dl	13.000	18.000	
Ht	44.4	%	40.000	54.000	
MCV	80.0	fl	81.000	98.000	*L
MCH	30.1	pg	27.000	32.000	
MCHC	37.6	%	32.000	36.000	*H
RDW	13.7	%	11.500	14.500	
Platelet	160	x1000/ul	140.000	450.000	
Segmented Neutro.	89.9	%	37.000	75.000	*H
Lymphocyte	6.7	%	20.000	55.000	*L
Monocyte	3.3	%	4.000	10.000	*L
Eosinophil	0.0	%	0.000	5.000	
Basophil	0.1	%	0.000	2.000	

Lab

GOT(AST)	49	U/L	5.000	35.000	*H
BUN	15	mg/dL	8.000	20.000	
Creatinine	0.9	mg/dL	0.500	1.300	
eGFR	99.08				
Na	111	meq/L	133.000	145.000	*L
K	6.0	meq/L	3.300	5.100	*H
iCa	4.41	mg/dL	3.680	5.600	
Ammonia	39	ug/dL	19.000	94.000	

Further management

- 四肢約束
- On EKG monitor
- NaHCO3 3 amp st
- VBG6
- D50W 3amp + RI 10U st
- Haldol 1 amp st
- On foley for urine
- 補TSH FT4 cortisol level

VBG6 11:07

- PH=7.334
- PCO2=35.5 mmHg
- PO2=16 mmHg
- BE=-7 mmol/L
- HCO3=18.9 mmol/L
- TCO2=20 mmol/L
- SO2=20 %
- NA=110 mmol/L
- K=6.8 mmol/L
- HCT=70 %PCV
- HB=23.8 g/dL

Head CT

- No ICH
- No mass lesion

Urine toxic screen

• APAP	NEG	N	
• AMP	NEG	N	
• mAMP	NEG	N	
• BAR	NEG	N	
• BZO	NEG	N	
• COC	NEG	N	
• MTD	NEG	N	
• OPI	NEG	N	
• PCP	NEG	N	
• THC	POS	H	
• TCA	NEG	N	

Family 表示沒有抽大麻

U/A

Sediment	**********			
RBC	0-1	/HPF	0.000	2.000
WBC	0-1	/HPF	0.000	5.000
Epithelial cell	3-5	/HPF	0.000	5.000
Cast	Not Found	/LPF		
.cast-amount	-			
Crystal	Am.phos	/HPF		
.Cry-amount	++			
Bacteria	-			

Neurologist consultation

- Fever ,2 days sgo,因為Insomnia:吃FM2
- Confusion, unsteady gait this morning
- E4V1M4
- Skin rash,neck stiffness
- Kernign's sign(-),Brudizinski sign(-)
- IMP: r/o meningitis r/o THC intoxication
- Plan: Consult intecion specialist
  Consider Lumbar puncture

13:00

- On NG
- Kalimate 3pk via NG st
- Consult Inf:收住院, 挪床中

lab

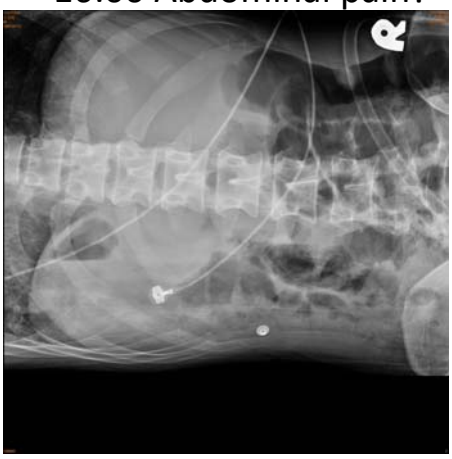
**AM Cortisol	41.5	ug/dL	6.200	19.400	*H
**PM Cortisol	***	ug/dL	2.300	11.900	
**UR Cortisol	***				
TSH	0.6998	uIU/mL	0.350	4.940	
T4,Free	0.81	ng/dL	0.700	1.480	

15:30

- PH=7.429
- PCO2=41.9 mmHg
- PO2=27 mmHg
- BE=3 mmol/L
- HCO3=27.8 mmol/L
- TCO2=29 mmol/L
- SO2=53 %
- NA=113 mmol/L
- K=5.0 mmol/L
- HCT=44 %PCV
- HB=15.0 g/dL

→3 % saline 20 cc/hr

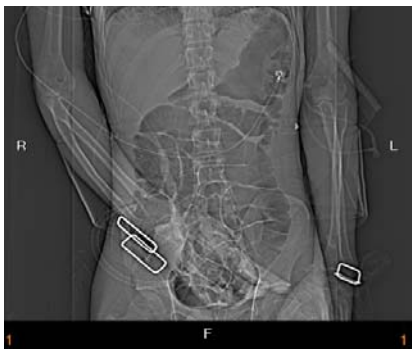
16:00 Abdominal pain?



16:00 Abdominal pain?

- NG:bile
- L't decubitus X ray:no free air, but severe ileus
- PE:r/o guarding(con's 差)
- Lab:Lipase **11** U/L
- Plan:
  - suggest ABD CT with/without contrast
  - Family 拒 contrat
  - Non contrat ABD CT

ABD CT



ABD CT

- 1. No detectable pneumoperitoneum.
- 2. Gaseous distension in the distal jejunum and ileal loops, suggest contrast-enhanced study to exclude distal ileal or ileocecal lesion.
- 3. Consider segmental colitis involving the ascending and transverse colon. Fluid collection at the right paracolic gutter is shown.

Admission
Tentative diagnosis

- Hyponatremia
- Hyperkalemia
- Acute delirium susp electrolyte inbalance or meningitis related
  R/O Marijuana intoxication

Admission course

- ABX:
  - Ampicillin 2g Q4H
  - Vancomycin 1g st and 500mg Q8H
  - Rocephin 2g Q12H
- IVF:3% saline 10ml/hr

Day2

- Na:118
- K:4.5
- 人 事 物對答OK,但人很累
- Plan:
  - f/u Na K level
  - Lumbar puncture

Lab CSF

Total-protein	1499.0	mg/dL	15.000	45.000	*H	
Lactate	30	mg/dL	10.000	22.000	*H	
Glucose PC	63	mg/dl	0.000	0.000		
Latex Crypt Ag	Negative					

Lab CSF

Color	Yellow			
Appearance	Clear			
Pandy's test	3+			
RBC	354	x10/9ul		
WBC	109	x10/9ul	0.000	5.000
L:N	98%:2%		0.000	5.000

Lab CSF

- Acid fast stain: Negative
- CSF GRAM‘S STAIN:Negative

Favor TB meningitis

- 申請Rifabutin

Day3

- Na 125
- Right leg weakness,不能動
- Muscle power 右下肢 1-2, other limbs 4
  - Consult neuro, and NCV
    - Favor AIDP,HIV related

Day 4

Creatinine	0.5	mg/dL	0.500	1.300	
eGFR	195.24				
Na	127	meq/L	133.000	145.000	*L
K	3.7	meq/L	3.300	5.100	
CRP	10.700	mg/dL	0.000	0.500	*H

Day 4

WBC	2.8	x1000/ul	3.800	10.000	*L
Differential count	**********				
Segmented Neutro.	88.0	%	37.000	75.000	*H
Lymphocyte	7.6	%	20.000	55.000	*L
Monocyte	3.3	%	4.000	10.000	*L
Eosinophil	1.1	%	0.000	5.000	
Basophil	0.0	%	0.000	2.000	
Platelet	170	x1000/ul	140.000	450.000	

Day6

- CSF culture:Negative
- Indian ink exam:Negative
- TB culture:Pending
- DC IV antibiotic

Day 6

albumin	2.6	g/dL	3.400	4.800	*L
Na	130	meq/L	133.000	145.000	*L
K	4.5	meq/L	3.300	5.100	
iCa	4.02	mg/dL	3.680	5.600	
P	4.50	mg/dL	2.500	4.500	
**AM Cortisol	26.1	ug/dL	6.200	19.400	*H
**PM Cortisol	26.1	ug/dL	2.300	11.900	*H
**UR Cortisol	***				
TSH	0.9668	uIU/mL	0.350	4.940	
T3	0.57	ng/mL	0.580	1.590	*L
T4,Free	1.02	ng/dL	0.700	1.480	

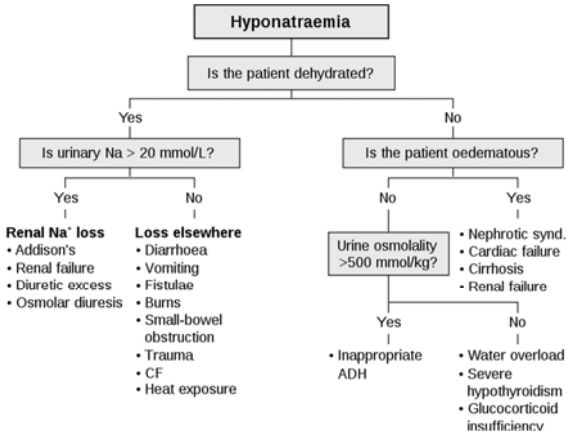
Day 6

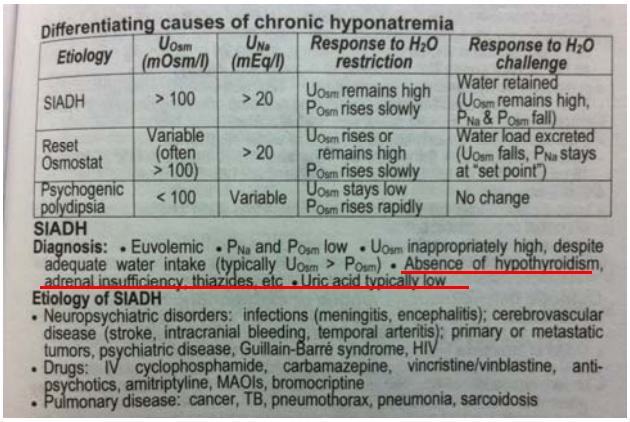
- Coffee ground vomitus
  - PES :GU
  - PPI

Day 9

- HSV 1&2 PCR :negative (CSF)
- Na:125
- K:4.6
- Urine
  - Cr 62.9
  - Na 79 meq/L 40-220
  - Osmo 634 mOsm/kg 300-900

Hyponatremia,Cause?





Differentiating causes of chronic hyponatremia

Etiology	U_{Osm} (mOsm/l)	U_{Na} (mEq/l)	Response to H_2O restriction	Response to H_2O challenge
SIADH	> 100	> 20	U_{Osm} remains high P_{Osm} rises slowly	Water retained (U_{Osm} remains high, P_{Na} & P_{Osm} fall)
Reset Osmostat	Variable (often > 100)	> 20	U_{Osm} rises or remains high P_{Osm} rises slowly	Water load excreted (U_{Osm} falls, P_{Na} stays at "set point")
Psychogenic polydipsia	< 100	Variable	U_{Osm} stays low P_{Osm} rises rapidly	No change

SIADH

Diagnosis: • Euvolemic • P_{Na} and P_{Osm} low • U_{Osm} inappropriately high, despite adequate water intake (typically U_{Osm} > P_{Osm}) • Absence of hypothyroidism, adrenal insufficiency, thiazides, etc • Uric acid typically low

Etiology of SIADH

- Neuropsychiatric disorders: infections (meningitis, encephalitis); cerebrovascular disease (stroke, intracranial bleeding, temporal arteritis); primary or metastatic tumors, psychiatric disease, Guillain-Barré syndrome, HIV
- Drugs: IV cyclophosphamide, carbamazepine, vincristine/vinblastine, anti-psychotics, amitriptyline, MAOIs, bromocriptine
- Pulmonary disease: cancer, TB, pneumothorax, pneumonia, sarcoidosis

Day 11

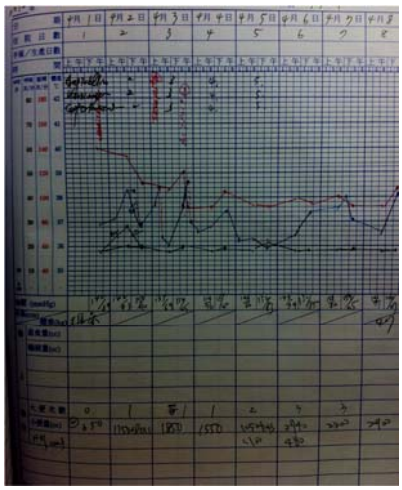
- Na:129 133-145
- K:4.5 3.3-5.1
- GOT:27 5-35
- GPT:31 10-50
- T-Bil:0.2 0.2-1.3
- Uric acid:1.4 3.4-7

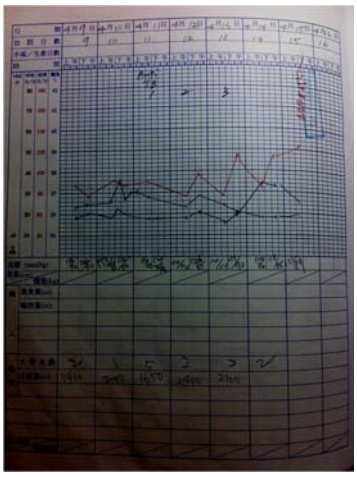
Start TB treatment

- Rifabutin 1# QOD
- Isoniazid 3# QD
- Ethanbutol 2# QD
- Pyrazinamide 3# QD

Day 15
MBD

- Final diagnosis
  - Susp TB meningitis
  - AIDP right lower limb,susp HIV related
  - Hyponatremia, favor SIADH and poor intake related s/p correction
  - Ileus,poor nutrition related
  - Gastric ulcer
  - AIDS





Disscussion

- Altered Mental Status
- Meningitis

Table 162-1 Features of Delirium, Dementia, and Psychiatric Disorder

Characteristic	Delirium	Dementia	Psychiatric Disorder
Onset	Over days	Insidious	Sudden
Course over 24 h	Fluctuating	Stable	Stable
Consciousness	Reduced or hyperalert	Alert	Alert
Attention	Disordered	Normal	May be disordered
Cognition	Disordered	Impaired	May be impaired
Orientation	Impaired	Often impaired	May be impaired
Hallucinations	Visual and/or auditory	Often absent	Usually auditory
Delusions	Transient, poorly organized	Usually absent	Sustained
Movements	Asterixis, tremor may be present	Often absent	Absent

Altered Mental Status

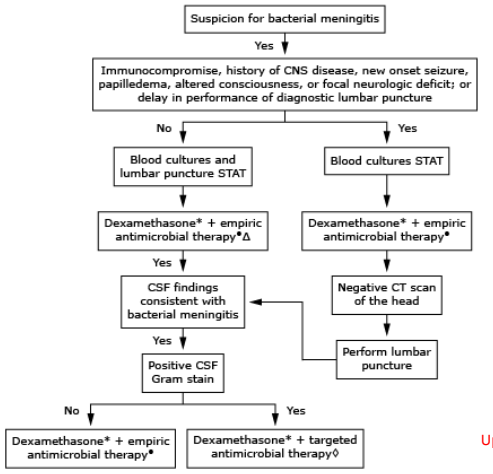
A：Alcohol 、 Acidosis
E：Encephalopathy 、Endocrinopathy、Electrolytes
I：Insulin
O：Opiates、Oxygen
U：Uremia
T：Trauma
I：Infection
P：Psychogenic causes
S：Seizure、Syncope、Space occupied leision

Altered Mental Status

- 工具
  - F/S
  - ABG6
  - Toxic screen
  - Brain CT
  - CBC/DC/PLT
  - BCS
  - Ammonia

Delirium--Pathophysiology

- Primary intracranial disease
- Systemic diseases secondarily affecting the central nervous system (CNS)
- Exogenous toxins
- Drug withdrawal



Uptodate

CSF analysis

	Glucose (mg/dL)		Protein (mg/dL)		Total white blood cell count (cells/microL)		
	<10*	10-45•	>250Δ	50-250◊	>1000	100-1000	5-100
More	Bacterial	Bacterial	Bacterial	Viral Lyme disease Neuro-syphilis	Bacterial	Bacterial or viral TB	Early bacterial Viral Neuro-syphilis TB
Less	TB Fungal	Neuro-syphilis Some viral infections (such as mumps and LCMV)	TB		Some cases of mumps and LCMV	Encephalitis	Encephalitis

Uptodate

CSF lactate

- The CSF lactate concentration has been observed to rise in experimental and clinical cases of bacterial meningitis
- Not often performed in clinical practice because this test does not offer substantially more information than standard CSF analysis
- Postoperative group

Uptodate

EMPIRIC THERAPY

- Ceftriaxone — 2 g IV every 12 hours

OR

- Cefotaxime — 2 g IV every four to six hours

PLUS

- Vancomycin — 30 to 60 mg/kg IV per day in two or three divided doses

PLUS

- In adults ≥50 years of age, ampicillin — 2 g IV every four hours

Uptodate

EMPIRIC THERAPY
Impaired cellular immunity

- Vancomycin — 30 to 60 mg/kg IV per day in two or three divided doses

PLUS

- Ampicillin — 2 g IV every four hours

PLUS EITHER

- Cefepime — 2 g IV every eight hours

OR

- Meropenem — 2 g IV every eight hours

Uptodate

Nosocomial infection

- Vancomycin — 30 to 60 mg/kg IV per day in two or three divided doses

PLUS

- Ceftazidime — 2 g IV every eight hours

OR

- Cefepime — 2 g IV every eight hours

OR

- Meropenem — 2 g IV every eight hours

Uptodate