Patient 6. Maybe this person could have been diagnosed with AD, but then became depressed and developed a gait problem, so less likely they have AD.

Female

**Medical Conditions**

Incorrect Diagnosis of AD

Breast Cancer

Ataxia

Medications

Donepezil Discontinued

Herceptin – Discontinued several years prior

New Diagnosis

Breast Cancer with Metastatic Brain Involvement

**Pharmacogenomic Associations**

**Overexpresion of Her2/neu necessary for selection of patients appropriate for drug therapy “**Detection of HER2 protein overexpression is necessary for selection of patients appropriate for HERCEPTIN therapy (see INDICATIONS).”
“HERCEPTIN should be used in patients whose tumors have been evaluated with an assay validated to predict HER2 protein overexpression (see PRECAUTIONS: HER2 Testing and CLINICAL STUDIES: HER2 Detection).”

**1)Metabolic**

**No current Medications – Therefore No associations Displayed**

**A)Enzyme related**

**Presence /Overexpression / Underexpression / Absence**

**(graphs should indicate specifically where patient falls on the curve of normally distributed enzymes)**

**(For obvious reasons not yet completed)**

(CYP 450 Subtype)

1A2



2C8



2C9



2C19



2D6



3A4 -



**Genomic Data**

This Patient is HER2 Positive and overexpresses this receptor

Implicated Biomarkers In Alzheimer’s Disease

T – Tau Absence

P –Tau Absence

AB42 Absence

APOE B4 Presence

**This Fake Patient’s Values are in the Far Right Column**

**Electrolytes and Metabolytess**

|  |  |  |
| --- | --- | --- |
| **Test** | **Range** | **Comments** |
| [Sodium](http://july.fixedreference.org/en/20040724/wikipedia/Sodium) (Na) | 130 - 145 mmol/L |  141 |
| [Potassium](http://july.fixedreference.org/en/20040724/wikipedia/Potassium) (K) | 3.5 - 5.0 mmol/L | 4 |
| [Urea](http://july.fixedreference.org/en/20040724/wikipedia/Urea) | 2.6 - 6.8 mmol/L | 9 |
| [Creatinine](http://july.fixedreference.org/en/20040724/wikipedia/Creatinine) | 50 - 110 μmol/L | 144 |
| [Glucose](http://july.fixedreference.org/en/20040724/wikipedia/Glucose) (fasting) | 4.2 - 6.1 mmol/L | 8 |

**Liver function tests**

|  |  |  |
| --- | --- | --- |
| Total Protein | 60 - 80 g/L | 62 |
| [Albumin](http://july.fixedreference.org/en/20040724/wikipedia/Albumin) | 30 - 50 g/L | 39 |
| Total [Bilirubin](http://july.fixedreference.org/en/20040724/wikipedia/Bilirubin) | 2 - 14 μmol/L | 19 |
| Direct Bilirubin | 0 - 4 μmol/L | 2 |
| [Alanine transaminase](http://july.fixedreference.org/en/20040724/wikipedia/Alanine_transaminase) (ALT) | 8 - 40 U/L | 77 |
| Alkaline phosphatase (ALP) | 40 - 130 U/L | 277 |
| Gamma glutamyl transferase | < 50 U/L | 245 |

**Other enzymes and proteins**

|  |  |  |
| --- | --- | --- |
| [Creatine kinase](http://july.fixedreference.org/en/20040724/wikipedia/Creatine_kinase) (CK) | 22 - 198 U/L | 66 |
| Aspartate transaminase (AST) | 8 - 35 U/L | 88 |
| [Lactate dehydrogenase](http://july.fixedreference.org/en/20040724/wikipedia/Lactate_dehydrogenase) (LDH) | 85 - 285 U/L | 244 |
| [Amylase](http://july.fixedreference.org/en/20040724/wikipedia/Amylase) | 25 - 125 U/L | 90 |
| [C-reactive protein](http://july.fixedreference.org/en/20040724/wikipedia/C-reactive_protein) (CRP) | <8 mg/L | 77 |

**Other ions and trace metals**

|  |  |  |
| --- | --- | --- |
| Ionised [calcium](http://july.fixedreference.org/en/20040724/wikipedia/Calcium) (Ca) | 1.15 - 1.29 mmol/L |  1.01   |
| Total calcium (Ca) | 2.05 - 2.55 mmol/L | 2.77 |
| [Copper](http://july.fixedreference.org/en/20040724/wikipedia/Copper) (Cu) | 11 - 26 μmol/L |  |
| [Zinc](http://july.fixedreference.org/en/20040724/wikipedia/Zinc) (Zn) | 10 - 17 μmol/L |  |

**Lipids**

|  |  |  |
| --- | --- | --- |
| [Triglycerides](http://july.fixedreference.org/en/20040724/wikipedia/Triglyceride) | 0.4 - 2.0 mmol/L | 2.6 |
| Total [cholesterol](http://july.fixedreference.org/en/20040724/wikipedia/Cholesterol) | 3.0 - 5.5 mmol/L | 5 |
| [HDL cholesterol](http://july.fixedreference.org/en/20040724/wikipedia/High_density_lipoprotein) (male) | 0.7 - 1.9 mmol/L | 1 |
| (female) | 0.9 - 2.4 mmol/L |  |
| [LDL cholesterol](http://july.fixedreference.org/en/20040724/wikipedia/Low_density_lipoprotein) | 2.4 - 4.0 mmol/l | 4 |

**Tumour markers**

|  |  |  |
| --- | --- | --- |
| [Alpha-fetoprotein](http://july.fixedreference.org/en/20040724/wikipedia/Alpha-fetoprotein) (AFP) | 1-15 kIU/L |  |
| CA-125 | <65 kU/L |  |
| [Prostate specific antigen](http://july.fixedreference.org/en/20040724/wikipedia/Prostate_specific_antigen) (total PSA) | <2.0 μg/L |   |

**Hormones**

|  |  |  |
| --- | --- | --- |
| [Thyroid stimulating hormone](http://july.fixedreference.org/en/20040724/wikipedia/Thyroid-stimulating_hormone) (TSH) | 0.5 - 4.7 mIU/L | 3 |
| Free [thyroxine](http://july.fixedreference.org/en/20040724/wikipedia/Thyroid_hormone) (FT4) | 9.0 - 24 pmol/L | 22 |
| Free [triiodothyronine](http://july.fixedreference.org/en/20040724/wikipedia/Thyroid_hormone) (FT3) | 2.5 - 5.3 pmol/L | 5 |
| [Adrenocorticotropic hormone](http://july.fixedreference.org/en/20040724/wikipedia/Adrenocorticotropic_hormone) (ACTH) | 1.3 - 15 pmol/L | 3 |
| [Cortisol](http://july.fixedreference.org/en/20040724/wikipedia/Cortisol) (0830 h) | 250 - 850 nmol/L | 522 |
| Cortisol (1630 h) | 110 - 390 nmol/L |  |
| [Prolactin](http://july.fixedreference.org/en/20040724/wikipedia/Prolactin) (male) | <450 mIU/L |  |
| (female) | <580 mIU/L |  |
| [Testosterone](http://july.fixedreference.org/en/20040724/wikipedia/Testosterone) (male) | 8 - 38 nmol/L |  |
| (male prepuberty) | 0.1 - 0.5 nmol/L |  |
| (female) | 0.3 - 2.5 nmol/L |  |

**Haematology**

**Red blood cells**

|  |  |  |
| --- | --- | --- |
| [Haemoglobin](http://july.fixedreference.org/en/20040724/wikipedia/Hemoglobin) (Hb) (male) | 130 - 180 g/L | 134 |
| (female) | 115 - 160 g/L | Sex difference negligible until adulthood. |
| [Haematocrit](http://july.fixedreference.org/en/20040724/wikipedia/Hematocrit) (Hct) (male) | 0.38 - 0.52 |  |
| (female) | 0.35 - 0.47 |  |
| Mean cell volume (MCV) | 80 - 98 fL | 95 |
| Mean cell haemoglobin (MCH) | 26 - 34 pg | 30 |
| Red cell count (male) | 4.5 - 6.5 x1012/L | 6 |
| (female) | 3.8 - 5.8 x1012/L |  |
| Reticulocytes | 10 - 100 x109/L | 20 |
| [Erythrocyte](http://july.fixedreference.org/en/20040724/wikipedia/Erythrocyte_sedimentation_rate)[sedimentation rate](http://july.fixedreference.org/en/20040724/wikipedia/Erythrocyte_sedimentation_rate) (ESR) |  | 33 |

**White blood cells**

|  |  |  |
| --- | --- | --- |
| Total white blood cells | 4.0 - 11.0 x109/L | 11 |
| Neutrophil granulocytes | 2.0 - 7.5 x109/L | 9 |
| [Lymphocytes](http://july.fixedreference.org/en/20040724/wikipedia/Lymphocyte) | 1.0 - 4.0 x109/L | 2 |
| Monocytes | 0.0 - 0.8 x109/L | 0.4 |
| Eosinophil granulocytes | 0.0 - 0.5 x109/L | 0.4 |
| Basophil granulocytes | 0.0 - 0.2 x109/L | 0.1 |

**Coagulation**

|  |  |  |
| --- | --- | --- |
| [Prothrombin time](http://july.fixedreference.org/en/20040724/wikipedia/International_normalized_ratio) (PT) | 7 - 10 s | 11 |
| [INR](http://july.fixedreference.org/en/20040724/wikipedia/International_normalized_ratio) | 0.8 - 1.2 | 1.1 |
| Activated partial thromboplastin time (APTT) | 29 - 41 s |  |
| Thrombin clotting time (TCT) | 11 - 18 s |  |
| [Fibrinogen](http://july.fixedreference.org/en/20040724/wikipedia/Fibrin) | 1.8 - 4.0 g/L | 3 |
| [Bleeding time](http://july.fixedreference.org/en/20040724/wikipedia/Bleeding_time) | 2 - 8 minutes | 6 |