A Retrospective Review of Neurosyphilis Cases at the Owen Clinic, University of California, San Diego

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Abstract

We report a retrospective analysis of 97 cases of neurosyphilis diagnosed at the Owen Clinic from 2003 to 2012. Diagnosis was based on symptoms, serum RPR titer, CSF WBC count, and/or CSF VDRL. There were 41 asymptomatic cases. Most cases had a serum RPR titer ≥ 1:32 (87/97 cases), the cutoff for when to perform an LP. Most cases had a CD4 ≥ 200 (70/97), of which 53 cases were on HAART. Symptoms and/or CSF pleocytosis often factored into the management decisions. Of note, 42/97 cases had a CSF WBC < 10 whereas prior studies demonstrated a CSF WBC > considered an indication for neurosyphilis treatment. Overall, treatment was consistent with the majority of cases a course of intravenous penicillin. With any guidelines, there will be missed cases. A high degree of suspicion based on symptoms and risk factors helped to account for the 10/97 cases with lower RPR titers.

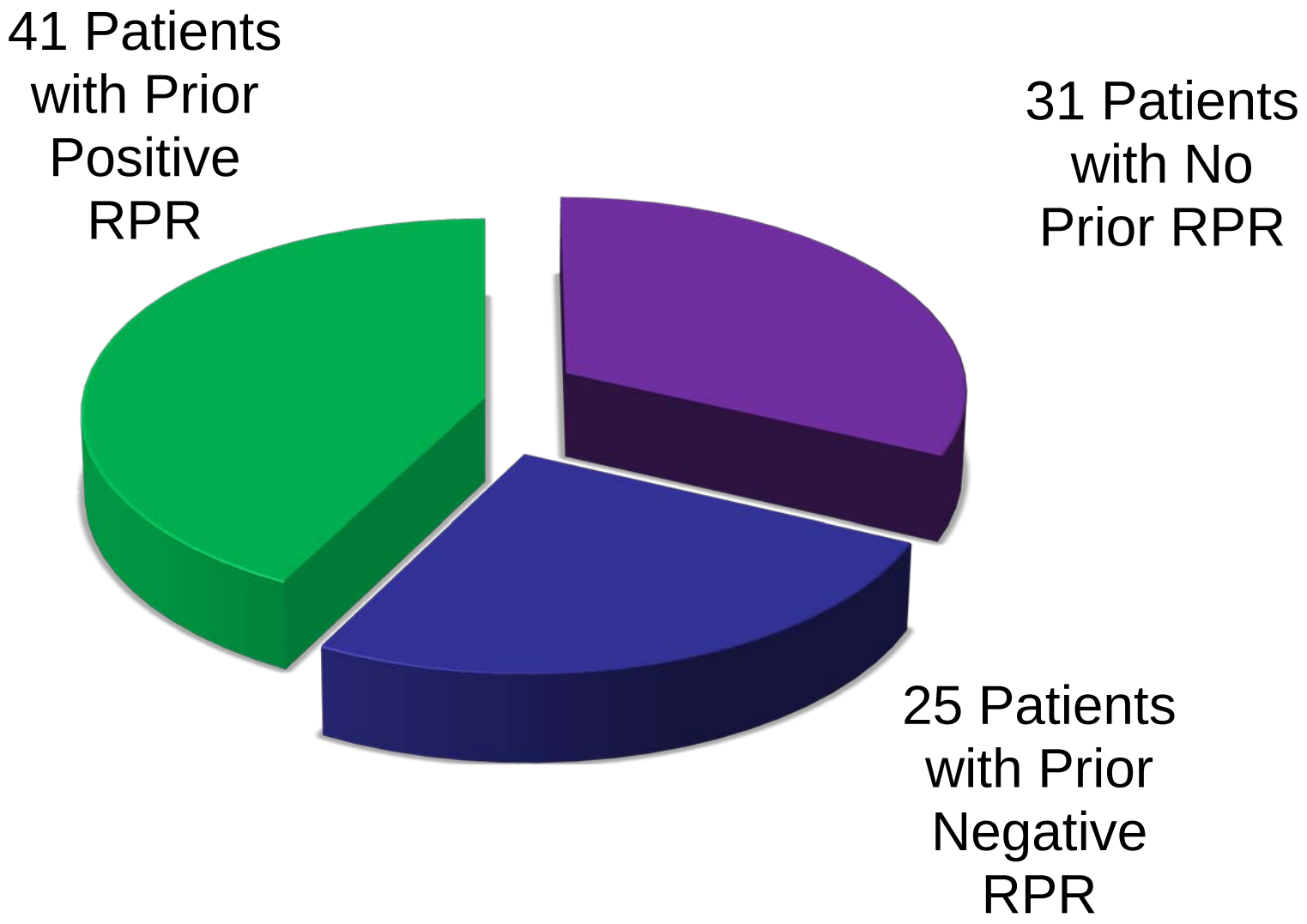
Introduction

- The rate of neurosyphilis is high in HIV seropositive patients (1). This may be secondary to their underlying immunodeficiency.
- Patients with lower CD4 counts are at increased risk for developing neurosyphilis (2).
- Current CDC guidelines recommend a lumbar puncture in HIV-infected patients with CD4 counts <350 and RPR titers >1:32 with or without symptoms to rule out neurosyphilis (3).
- As this is a highly treatable infection, it is imperative to test and treat those with risk factors to prevent the potentially irreversible effects of neurosyphilis.

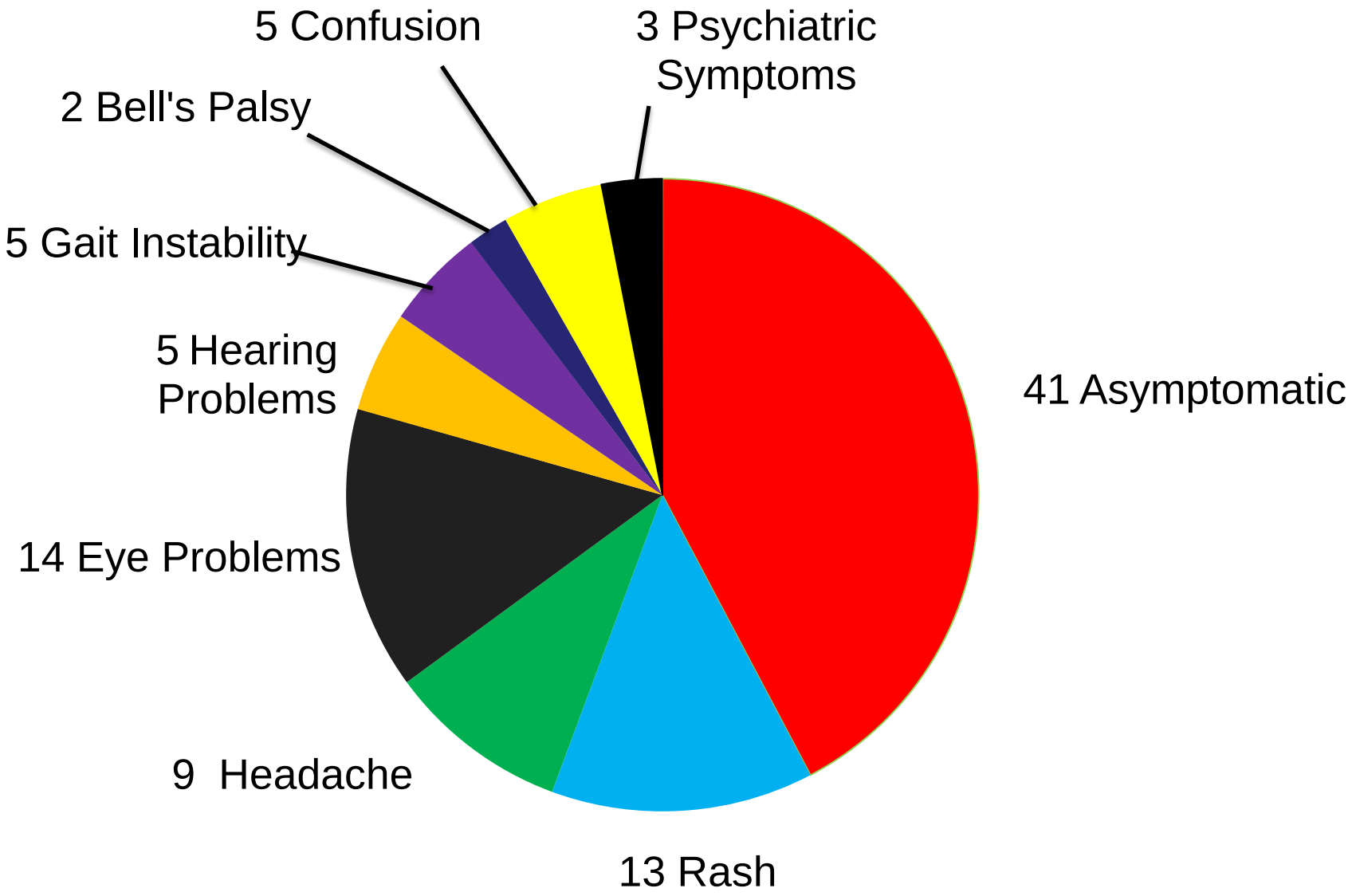
Methods

- Owen Clinic Database search for patients with ICD-9 Code 094.0-.9 for Neurosyphilis
- Medical Record Review of these patients narrowed to those who had lumbar puncture results
- 97 cases (8 cases of re-infection) were identified from 2003 to January 2013 with lab results and symptoms documented

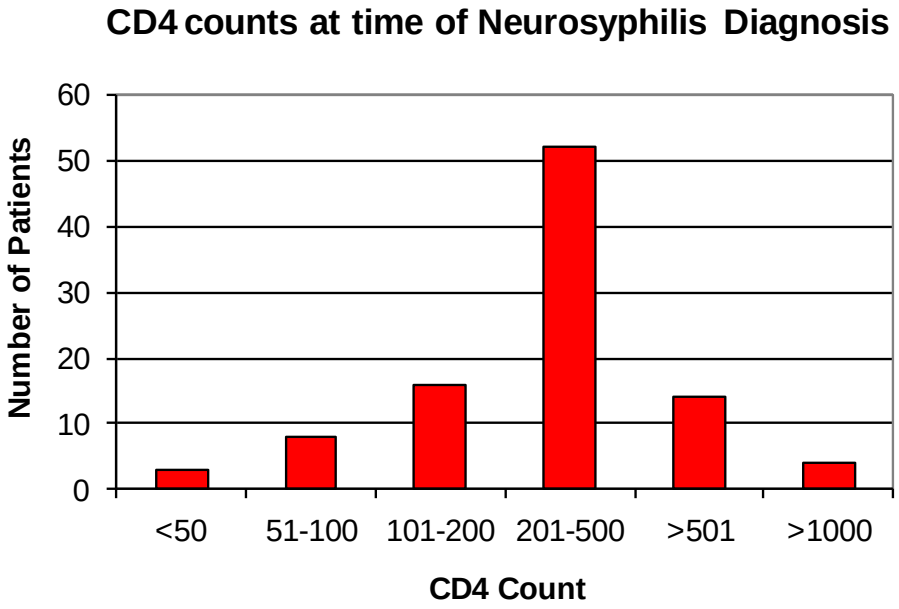
41 patients had a prior positive RPR

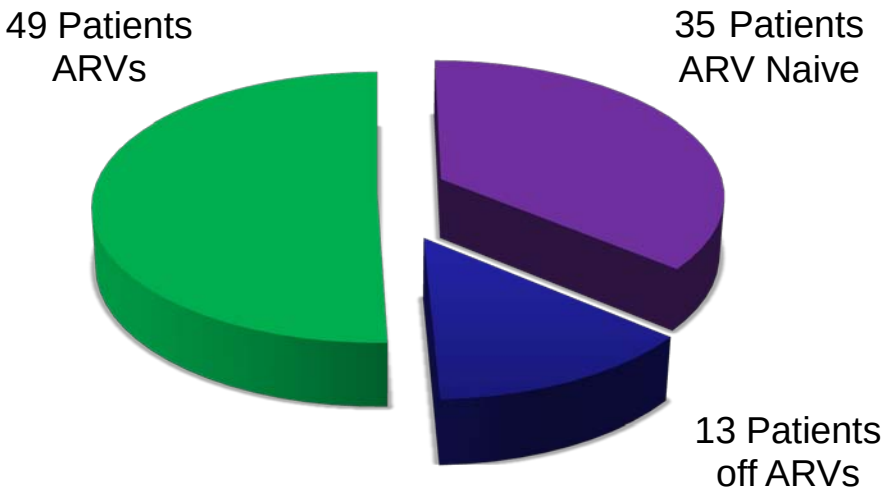


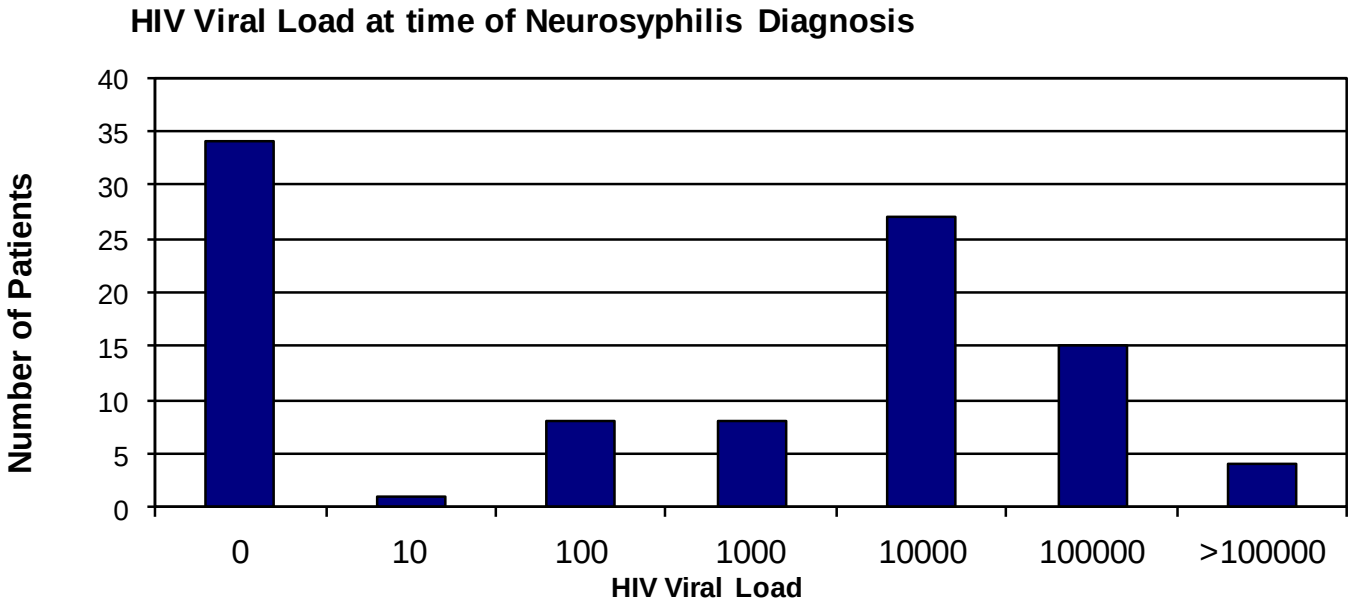
Most patients were asymptomatic at time of neurosyphilis diagnosis



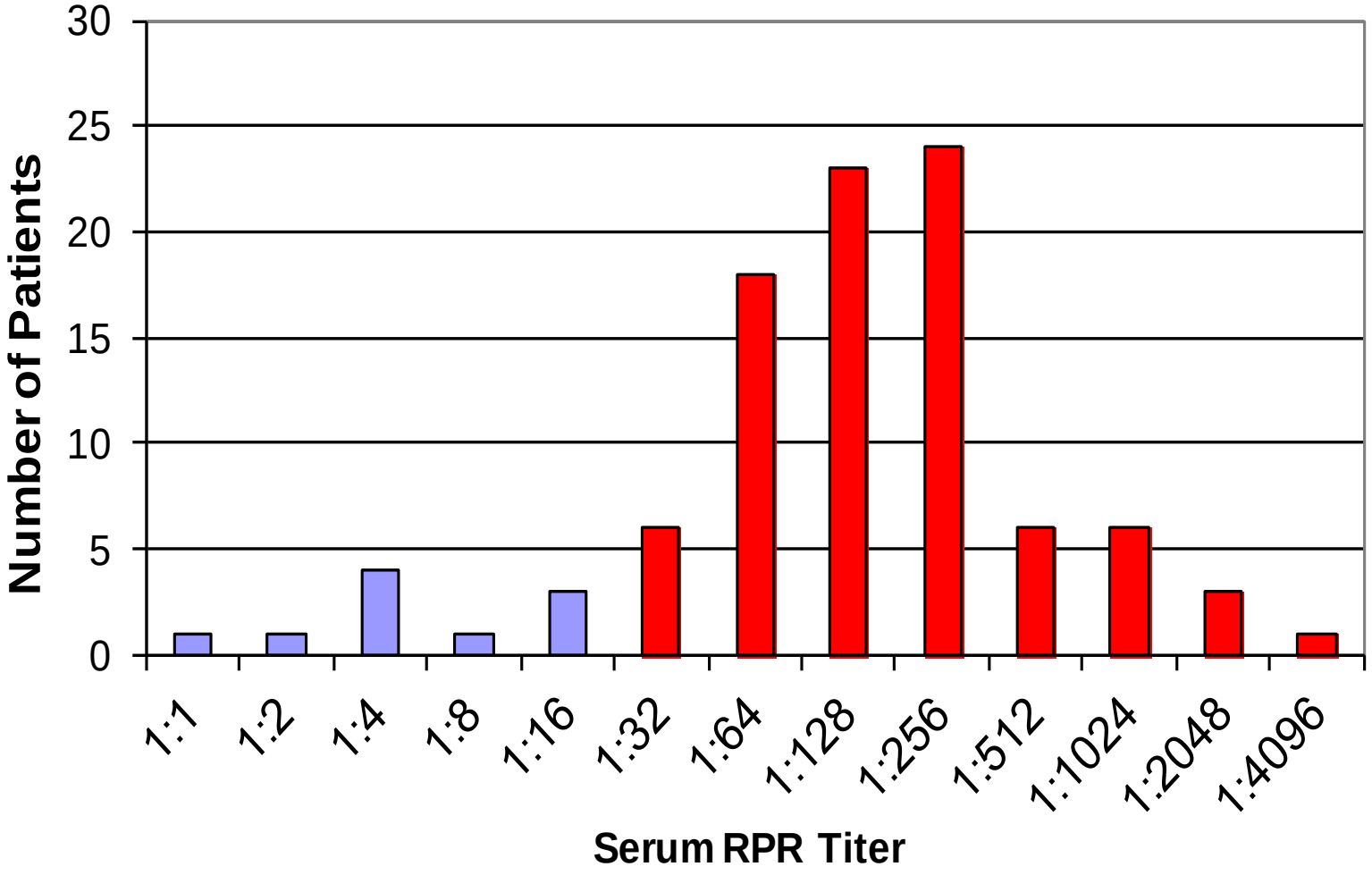
Most patients had CD4 counts>200



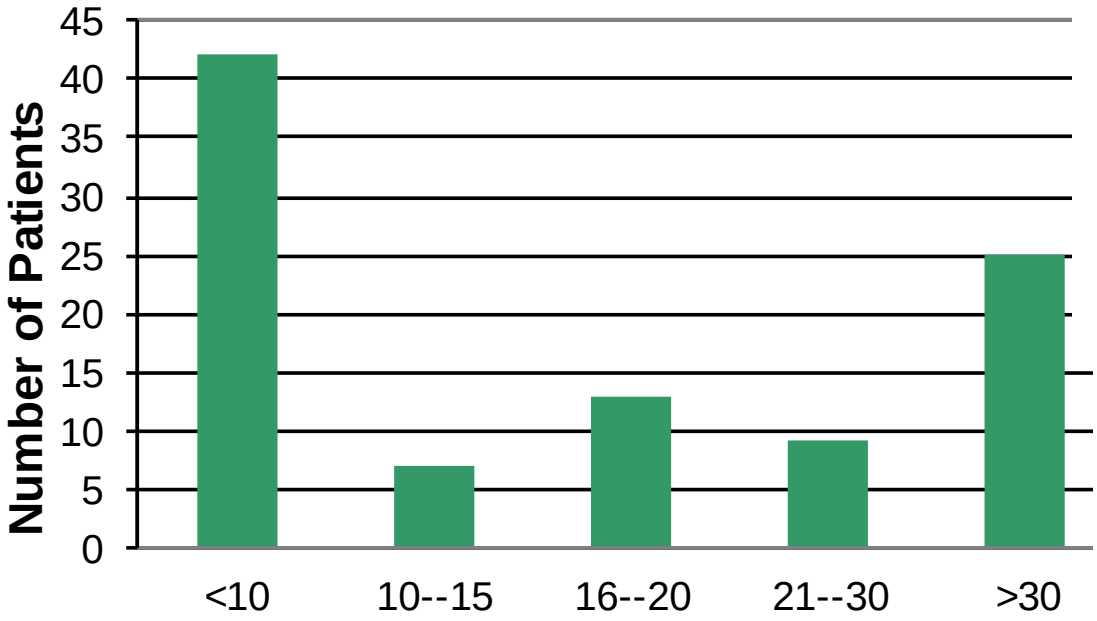


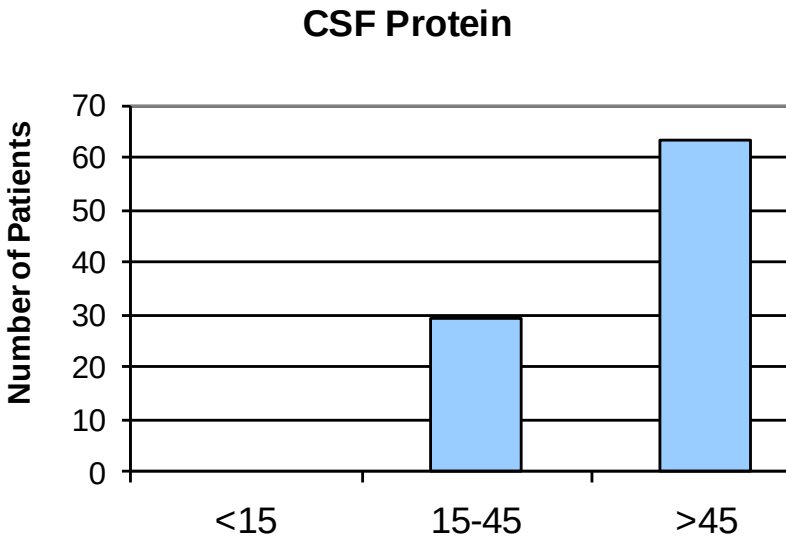


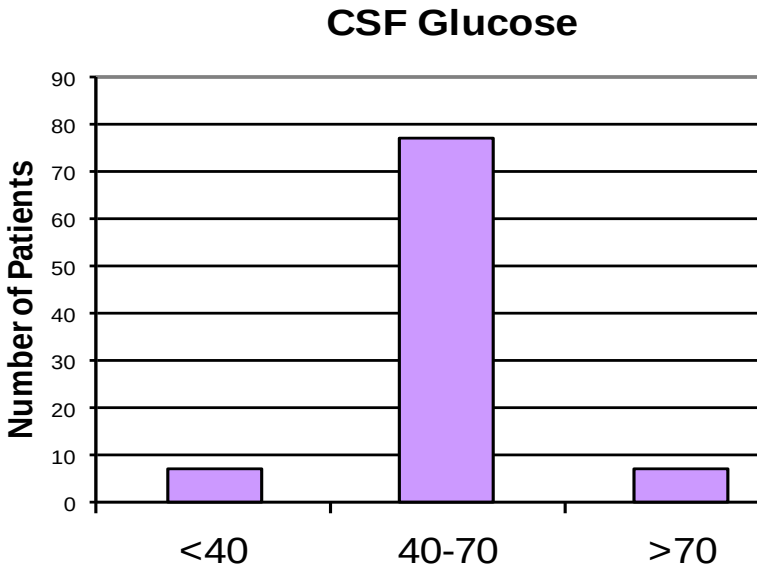
10 Patients had serum RPR titers <1:32 (Recommended threshold for lumbar puncture > 1:32)



42 patients had a CSF WBC <10







There were 31 patients with a Negative CSF VDRL

CSF VDRL	Number of Patients (Total=97)
Negative	31
Not Done	2
Positive	7
1:1	22
1:2	19
1:4	13
1:8	2
1:16	1

Clinical Characteristics in Patients with Negative CSF VDRL

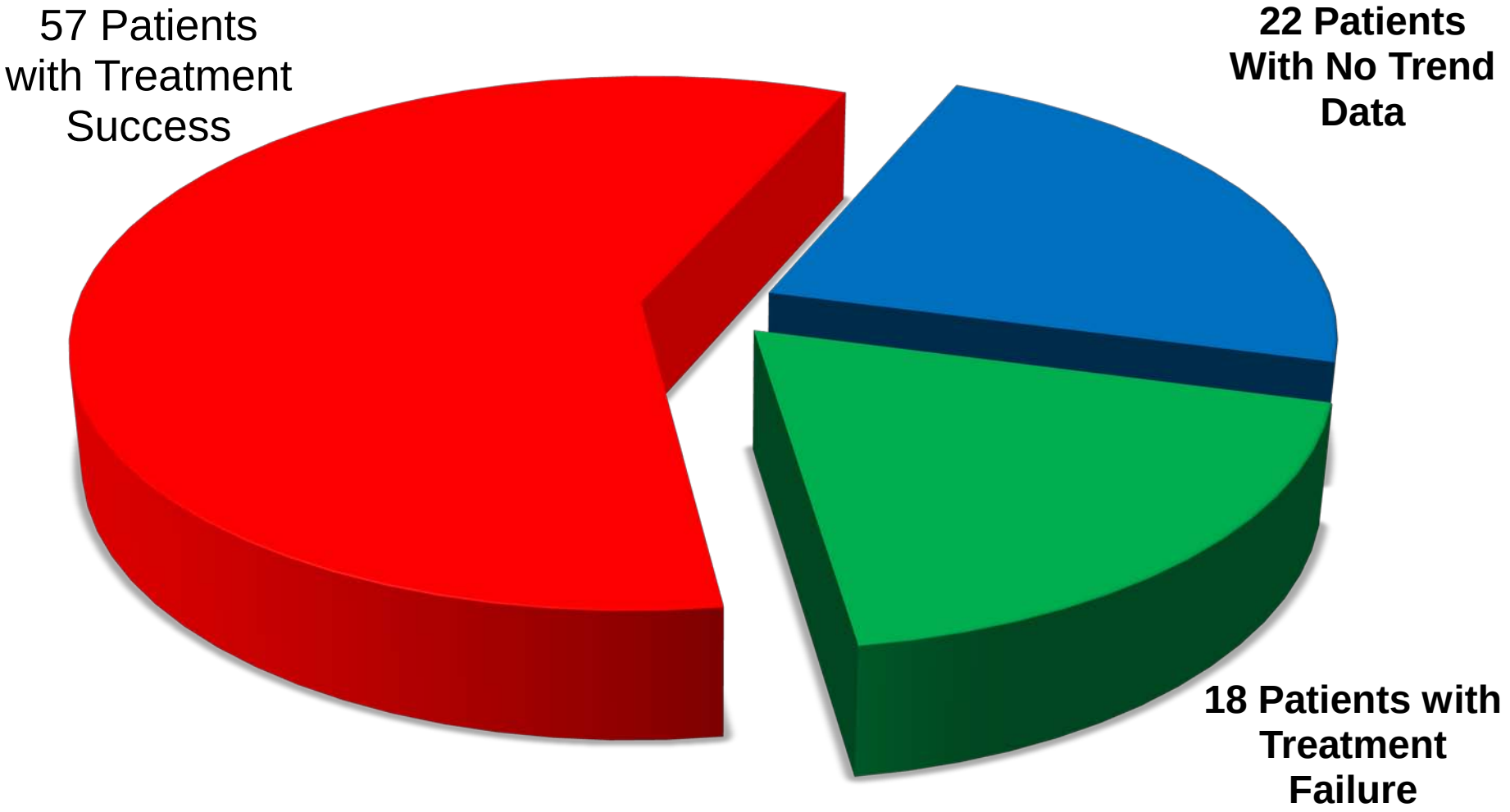
Patients	CSF WBC	Symptoms	Serum RPR	Symptom Resolution
1	20	Headache	1:128	Resolved
2	21	Headache	1:2	Resolved
3	57	Rash	1:64	Resolved
4	41	None	1:64	
5	9	Headache	1:64	Resolved
6	37	Uveitis	1:256	Visual Defect
7	20	Gait	1:64	Unclear
8	1	Uveitis	1:1	Resolved
9	4	Otosyphilis	1:32	Hearing Loss
10	17	None	1:128	
11	38	None	1:128	
12	20	Gait	1:4	Unclear
13	12	None	1:1024	
14	9	Otosyphilis	1:256	Resolved
15	7	Otosyphilis	1:2048	Resolved
16	6	Pregnant	1:256	

Patients	CSF WBC	Symptoms	Serum RPR	Symptom Resolution
17	17	None	1:16	
18	18	Rash	1:128	Resolved
19	18	None	1:64	
20	2	Uveitis	1:64	Resolved
21	14	Bell's Palsy	1:16	Resolved
22	3	Dizziness	1:256	Resolved
23	9	None	1:4	
24	x	None	1:128	
25	30	Otosyphilis	1:64	Hearing Loss
26	9	None	1:32	
27	46	Uveitis	1:4	Resolved
28	73	None	1:64	
29	30	Headache	1:64	Resolved
30	17	None	1:256	
31	1	Bell's Palsy	1:64	Resolved

Characteristics of Patients for whom a CSF VDRL was not performed

1	16	Uveitis	1:128	Resolved
2	38	Rash	1:256	Resolved

Treatment success, defined as a 4-fold Decrease in RPR by 6 months, was observed in 57 patients



95 of 97 patients were treated with IV penicillin

- Of the 95 patients who received IV penicillin, 15 received additional intramuscular penicillin doses; 11 of these 15 were treated as an outpatient with intramuscular benzathine penicillin while awaiting LP results.
- 2/97 patients received benzathine penicillin alone.
  - Patient 1: CD4 255, VL 120K, HAART Naïve. RPR Titer 1:64 with rash. CSF WBC 57, Glucose 60, Protein 23, and Negative VDRL. Received 3 doses of IM penicillin. At 18 month follow-up visit, repeat serum RPR titer was 1:1.
  - Patient 2: CD4 308, VL 316K, HAART Naïve. RPR Titer 1:256. Asymptomatic. CSF WBC 20, Glucose 50, Protein 49, and VDRL 1:1. Received 2 doses of IM penicillin and did not follow-up.

Conclusions

- With increased screening, we find more cases of neurosyphilis
- A negative CSF VDRL is not 100% sensitive.
- There were 42 patients with evidence of neurosyphilis and a CSF WBC <10.
- A combination of symptoms, serum RPR titer, CSF pleocytosis, and CSF VDRL are generally required to make appropriate treatment decisions in this setting.

References

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- UCSD IRB Approval #071931, Renewed 7/26/2012, Expires 7/26/2014. Owen Clinic Master Protocol: Retrospective Use of Existing Clinic Data.
- Supported by UCSD CFAR Core Services