

Voriconazole in Coccidioidal Meningitis Following Failure of Response to Fluconazole



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Abstract: 31088

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Abstract

Background: Coccidioidal Meningitis (CM) remains a challenging disease despite its discovery over a century ago. Fluconazole, and intrathecal amphotericin B have been useful in management and provided favorable responses. Published experience with voriconazole has been limited to small case reports. Kern Medical Center in Bakersfield California provides a specialty clinic for serious cases of CM. Our objective was to evaluate experience with voriconazole in a large case series over 7 years.

Methods: Medical records of patients with CM, a history of refractory response to fluconazole, and subsequent treatment with oral voriconazole were evaluated for clinical and laboratory disease variables over a 7 year period. Those with <6 months of records or who were lost to follow-up were excluded. Cases were evaluated for response utilizing the Mycoses Study Group Scoring system for CM (MSG Score). A decrease in score of 40% is considered a favorable response. Evaluation was also performed utilizing cerebrospinal fluid pleocytosis. A decrease to 50 cells or less or stable number of <50 cells was considered a favorable response.

Results: 33 evaluable cases were identified with 6 to 18 months of complete data. 78% were male. Hispanics were most prevalent (78%) followed by Caucasians (21%) and African American (9%). 8 (24%) had diabetes and 19 (57%) required a shunt for hydrocephalus. A history of seizure was documented in eight (24%). 25 cases had a baseline MSG Score of 6 or greater. A 40% drop in score was observed in 12 of the 25 (48% response rate). In 8 cases with a score of <6 a stable score (remaining at <6) was observed in 7 (87%). An overall favorable response utilizing the scoring system was therefore identified in 19 of 33 cases (57%). Pleocytosis of >50 cells at baseline was noted in 17 cases. In 15 of these, pleocytosis decreased to <50 (88%). In 14 cases with <50 cells, 12 remained below 50 (85%). A 87% overall favorable response (27 of 31) was therefore observed in pleocytosis. 17 (51%) experienced photodermatitis which was much higher than expected from the literature.

Conclusion: Voriconazole is a useful oral agent for controlling the symptoms and laboratory indices of Coccidioidal Meningitis in patients with refractory responses to fluconazole.

Background

- ❖ Treatment of Coccidioidal Meningitis (CM) remains challenging.
- ❖ Fluconazole and intrathecal amphotericin B provided favorable responses.
- ❖ Published experience with voriconazole has been limited to small case reports.
- ❖ Our objective was to evaluate experience with voriconazole in a large case series over 7 years.

Methods

- ❖ Retrospective up to 7 years review of patients with CM on Voriconazole with history of refractory response to fluconazole..
- ❖ Response evaluated by:
 - Mycoeses Study Group Scoring system (MSG): 40% reduction is considered favorable.
 - Cerebrospinal Fluid pleocytosis: decrease by 50 cells or stable <50 cells was considered favorable.

Results

- ❖ Total of 33 cases were identified : All with 18 months of complete data with cases up to 60 months data.
- ❖ Gender: Majority male (78%).
- ❖ Ethnicity: Hispanics :78%; Caucasians :21%; and African American: 9%.
- ❖ 19 (57%) required a shunt for hydrocephalus.
- ❖ 25 cases had a baseline MSG Score of 6 or greater. A 40% drop in score was observed 12 of the 25 (48% response rate). In 8 cases with a score of <6 a stable score (remaining at <6) was observed in 7 (87%). **Figure 1**
- ❖ A overall favorable response utilizing the scoring system was therefore identified in 19 of 33 cases (57%). **Table 1**

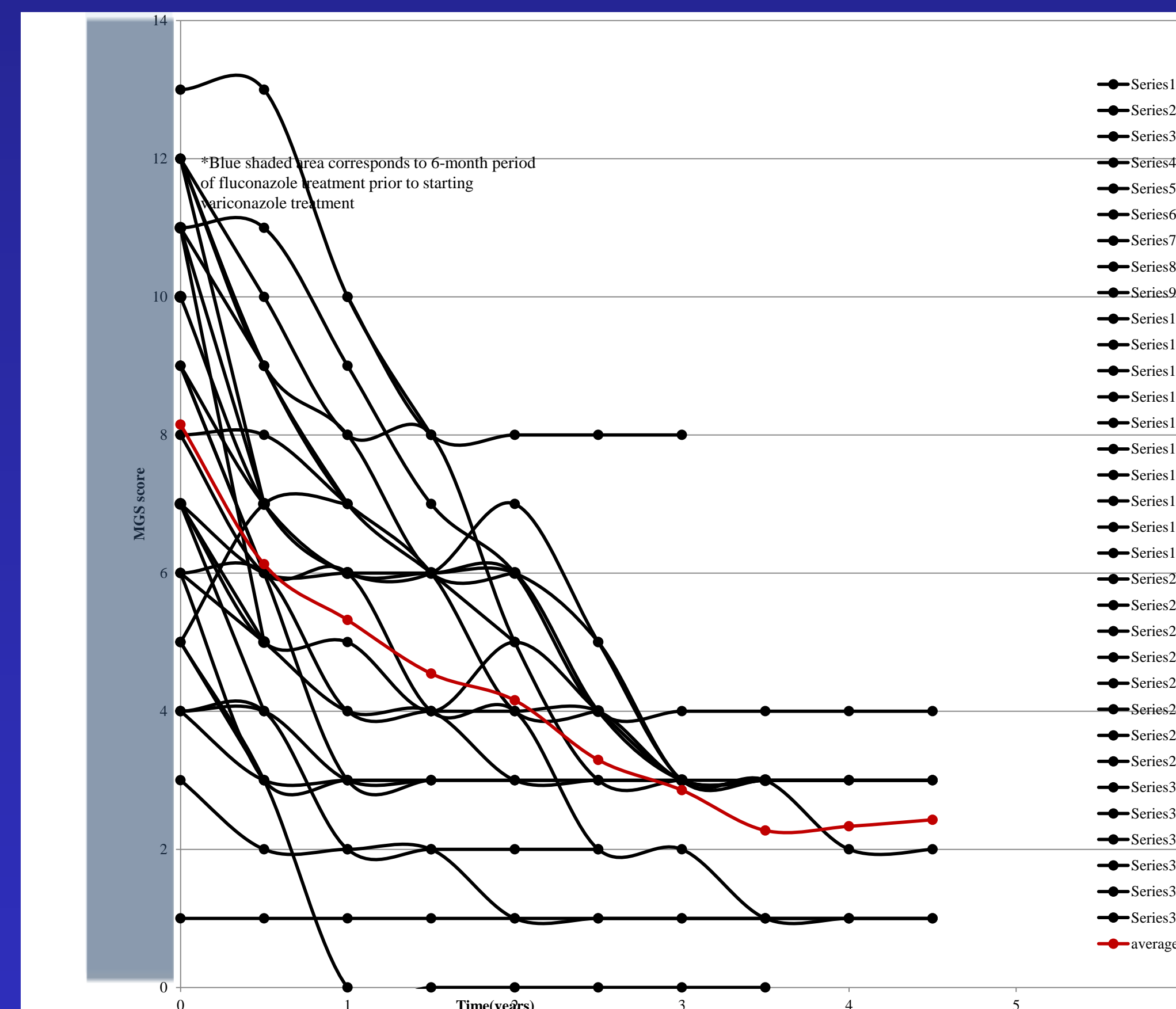


Figure 1 :MGS score

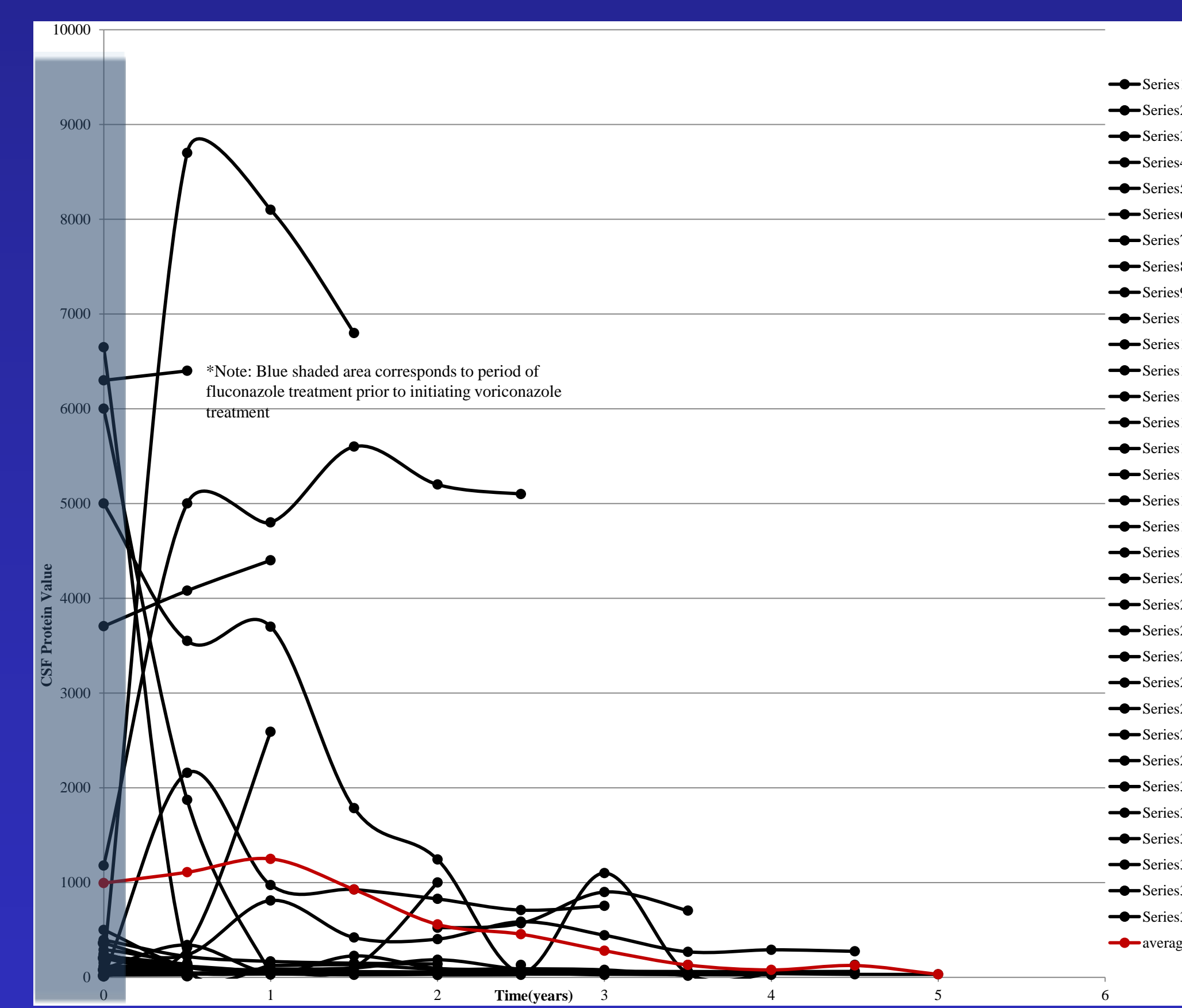


Figure 3: CSF Protein Levels

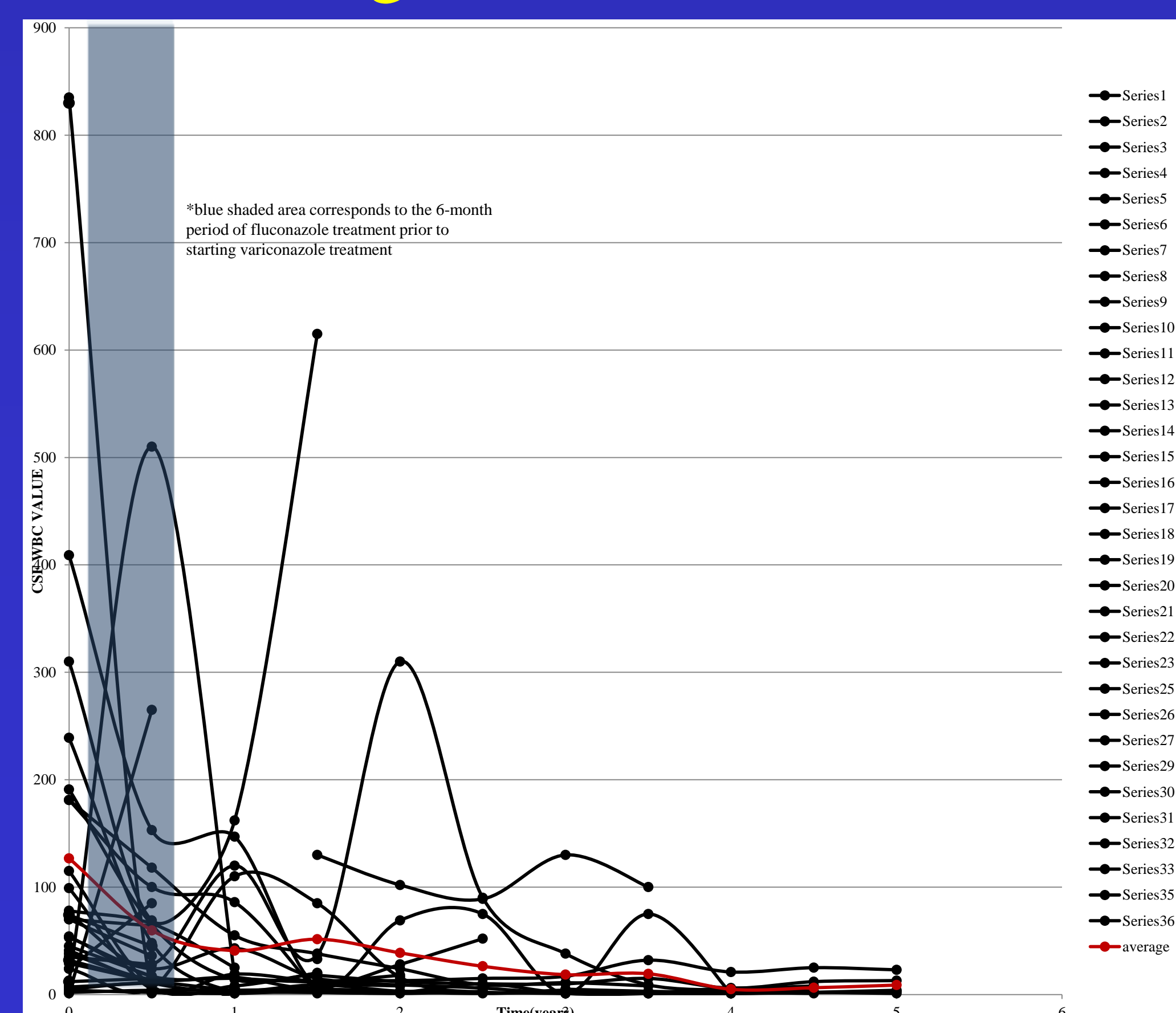


Figure 2: CSF Pleocytosis

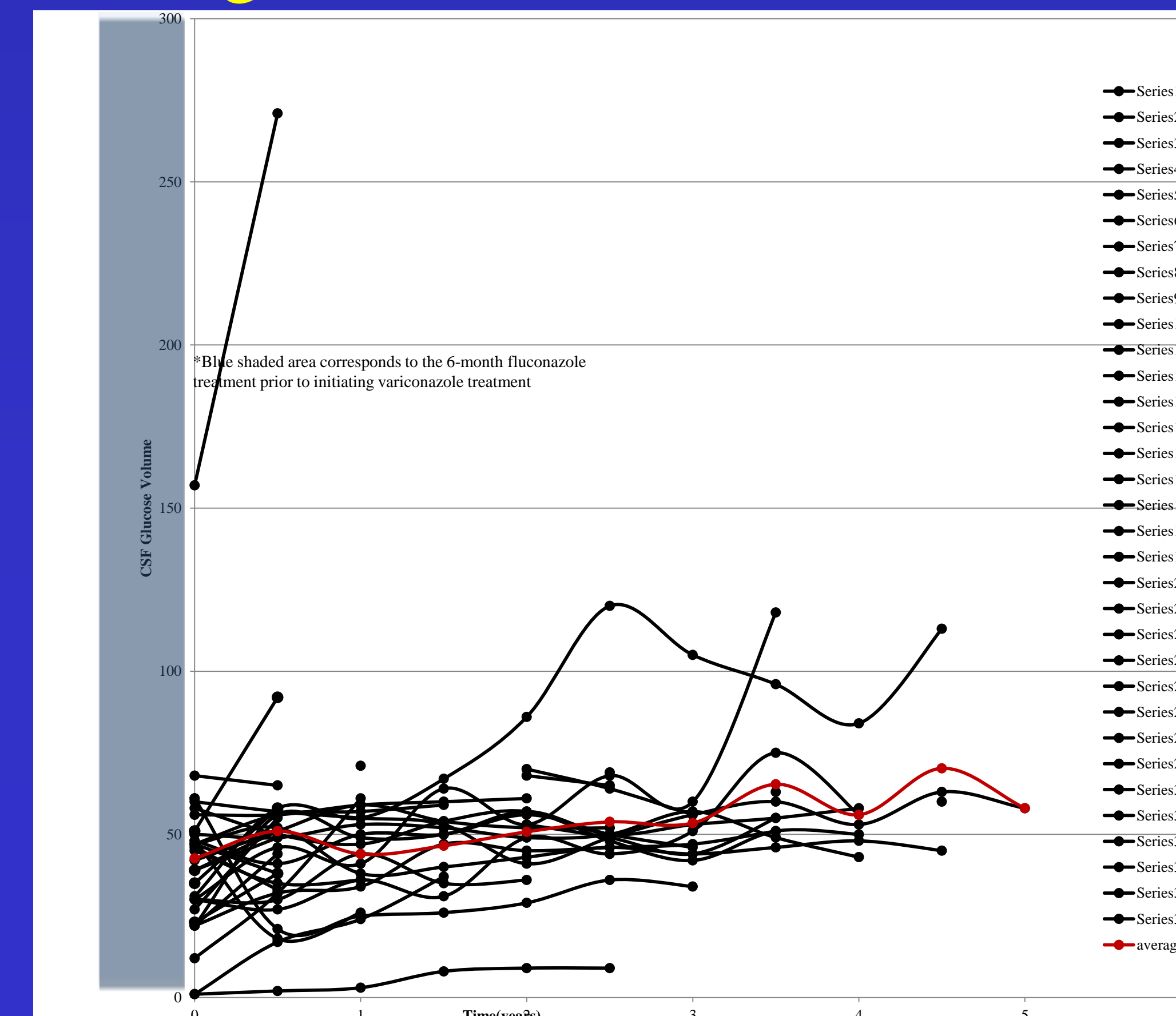


Figure 4: CSF Glucose Levels

Results

- ❖ Pleocytosis of >50 cells at baseline was noted in 17 cases.
- ❖ In 15 of these, pleocytosis decreased to less than 50 (88%).
- ❖ In 14 cases with less than 50 cells, 12 remained below 50 (85%). A 87% overall favorable response (27 of 31) was therefore observed in pleocytosis. **Figure 2 and Table 1**
- ❖ CSF Glucose and protein also showed improvement . **Figure 3 and 4**
- ❖ Seventeen (51%) experienced photodermatitis which was much higher than expected from the literature

	Number	Variable	Outcome	Rate
Total Cases	33			
MSG¶ Baseline > 6	25	40% drop in score	12 yes, 13 no	48%
MSG¶ Baseline <6	8	*Stable score	7 yes, 1 no	87%
MSG¶ Score All	33	**Favorable outcome	19 yes, 14 no	57%
CSF WBC >50 at baseline	17	Decrease in WBCs below 50	15 yes, 2 no	88%
CSF WBC <50 at baseline	14	Stable WBCs at 50 or less	12 yes, 2 no	85%
All cases with evaluable CSF WBCs	31	Stable at less than 50 or a decrease to below 50	27 yes, 4 no	87%

Table 1: Treatment response of Voriconazole in Coccidioidal Meningitis by MSG score and CSF pleocytosis.
MSG¶ : Mycoses Study Group Score
*Stable Score = maintenance of a MSG Score of 6 or less
**Favorable Outcome= a 40% drop in MSG score for those with a baseline of 6 or greater , or a stable score for those with a baseline of less than 6.

Conclusion

- ❖ Voriconazole is a useful oral agent for controlling the symptoms and laboratory indices of Coccidioidal Meningitis in patients with refractory responses to fluconazole.