

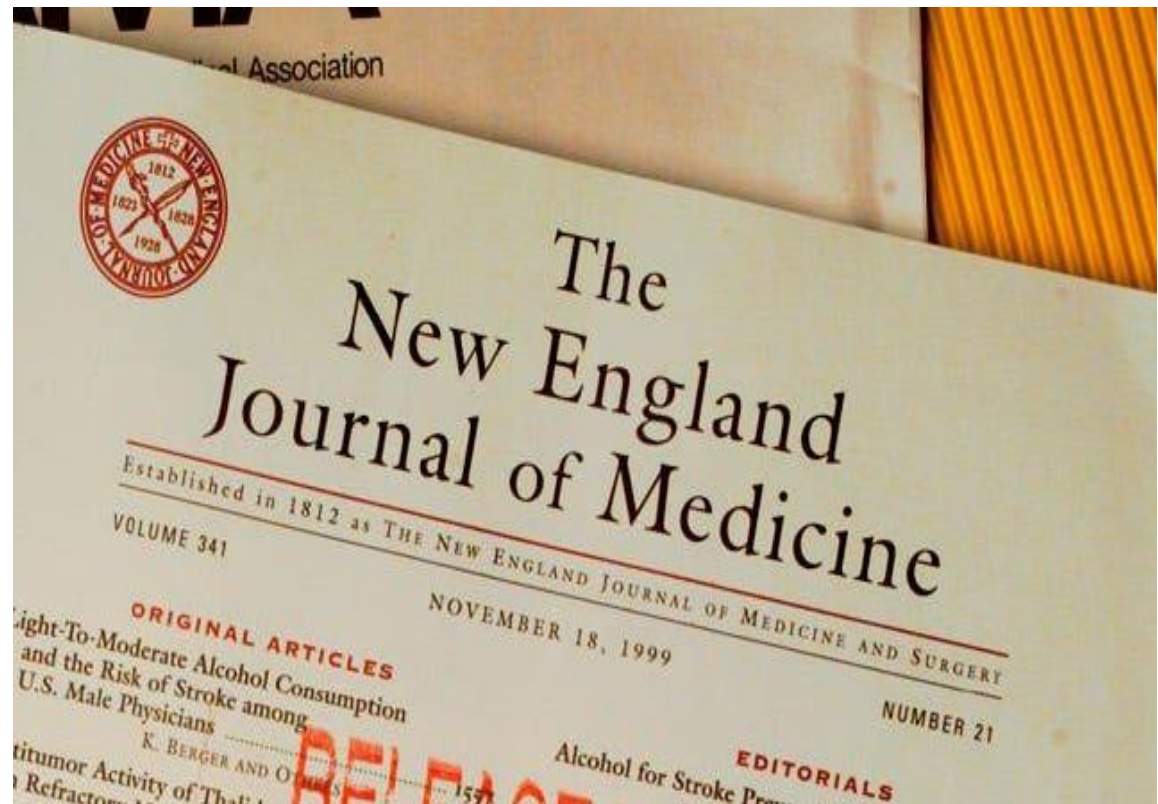
# Kidney Injury and Hair-Straightening Products Containing Glyoxylic Acid

achwak lihimer

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# Source :

- the new england journal of medicine
- September 2024



# Plan:

- 1-INTRODUCTION
- 2-hypothesis
- 3-REAL CASE
- 4-STUDY
- 5- EXPERIENCE
- 6-RESULTS
- 7-CONCLUSION

# Introduction :

- Hair treatments, particularly those aimed at straightening and smoothing, have garnered popularity in recent decades. recently described 26 patients in who had acute kidney injury after a “Brazilian” hair-straightening procedure.

# hypothesis:

- hypothesized that glycolic acid derivatives contained in hair-straightening products could be absorbed through the skin and metabolized into oxalate by the liver, thereby leading to calcium oxalate nephropathy.

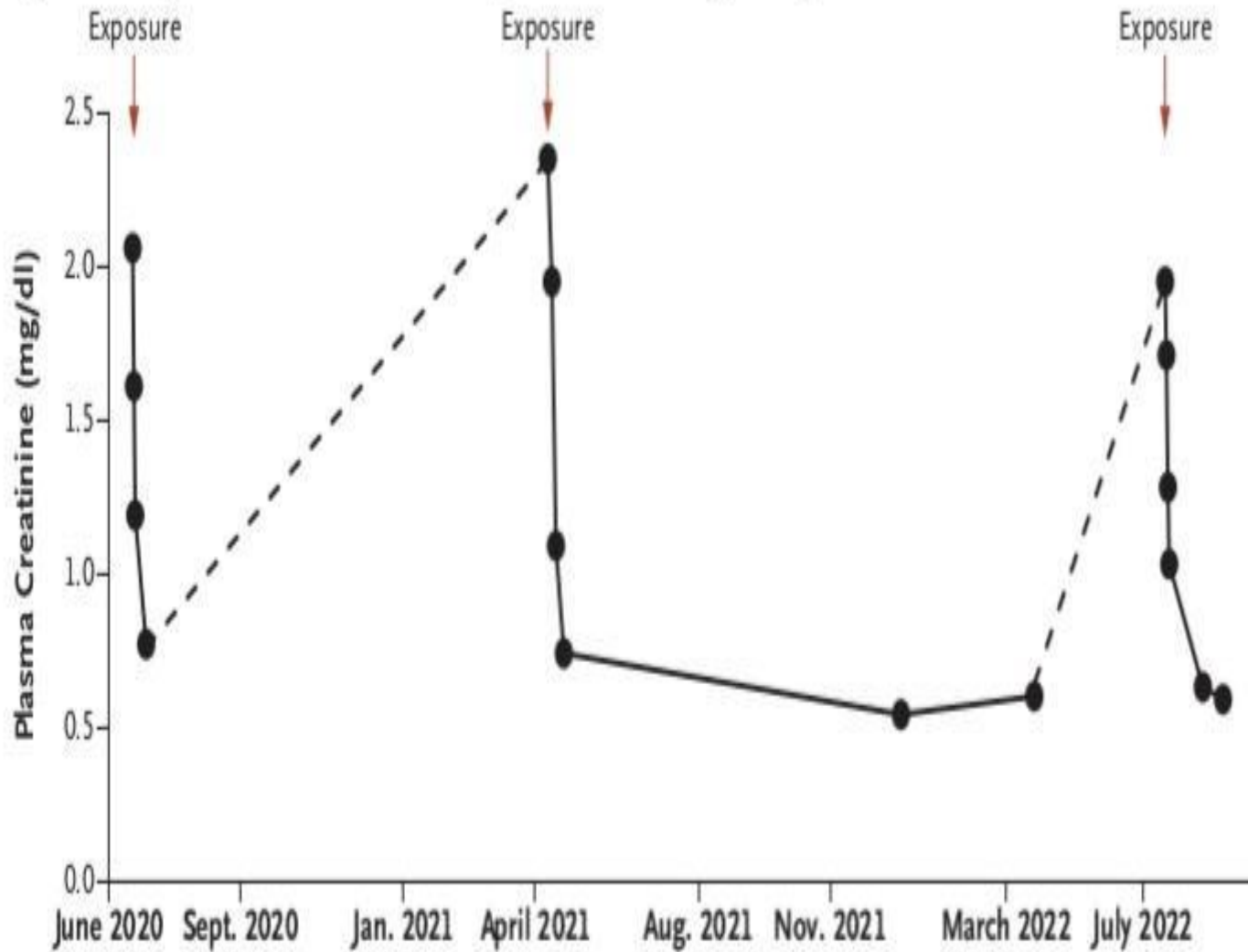
## Real case :

- We report the case of a 26-year-old Tunisian woman without previous health issues who had three consecutive episodes of acute kidney injury (June 2020, April 2021, and July 2022) . She presented with vomiting, diarrhea, fever, and back pain. Laboratory studies showed increases in the plasma creatinine level during each episode. A computed tomographic (CT) scan indicated no evidence of obstructive uropathy, and urinalyses confirmed the presence of blood and leukocytes without proteinuria or infection. Kidney function improved rapidly after each episode, and the plasma creatinine level was normal.

# Experience :

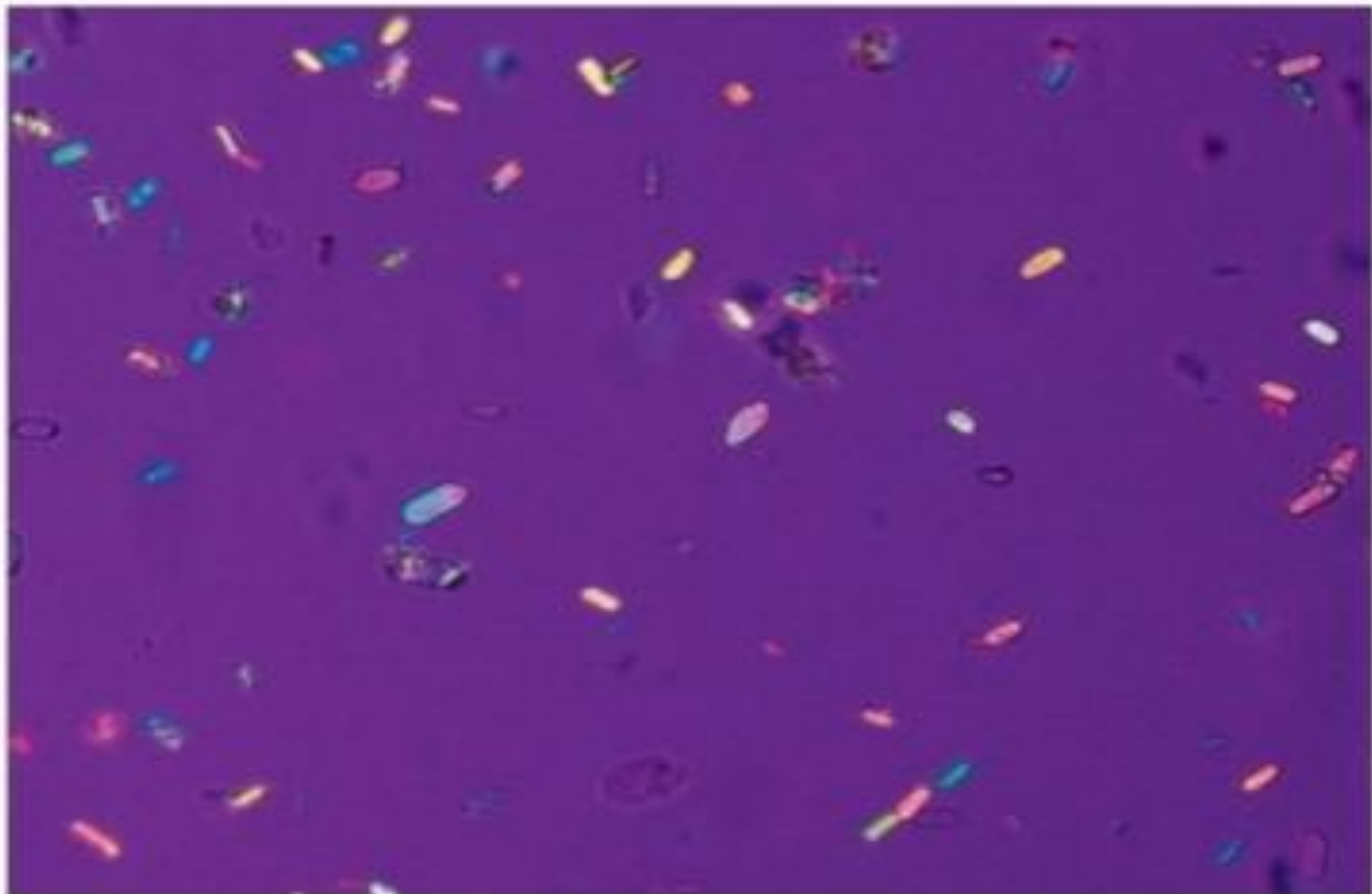
- we applied the straightening product to the backs of mice . Urinalyses performed the day after cream application revealed the presence of elongated calcium oxalate monohydrate crystals, similar to those observed after ethylene glycol intoxication, in the mice exposed to the hairstraightening cream.<sup>2,3</sup> The plasma creatinine level in the exposed mice increased 28 hours after cutaneous application of the hair straightening cream . Three-dimensional CT scans of the kidneys of the exposed mice showed the presence of dense tubule-molding calcium oxalate monohydrate.

# A Changes in Kidney Function in a Patient after Exposure to Hair-Straightening Cream

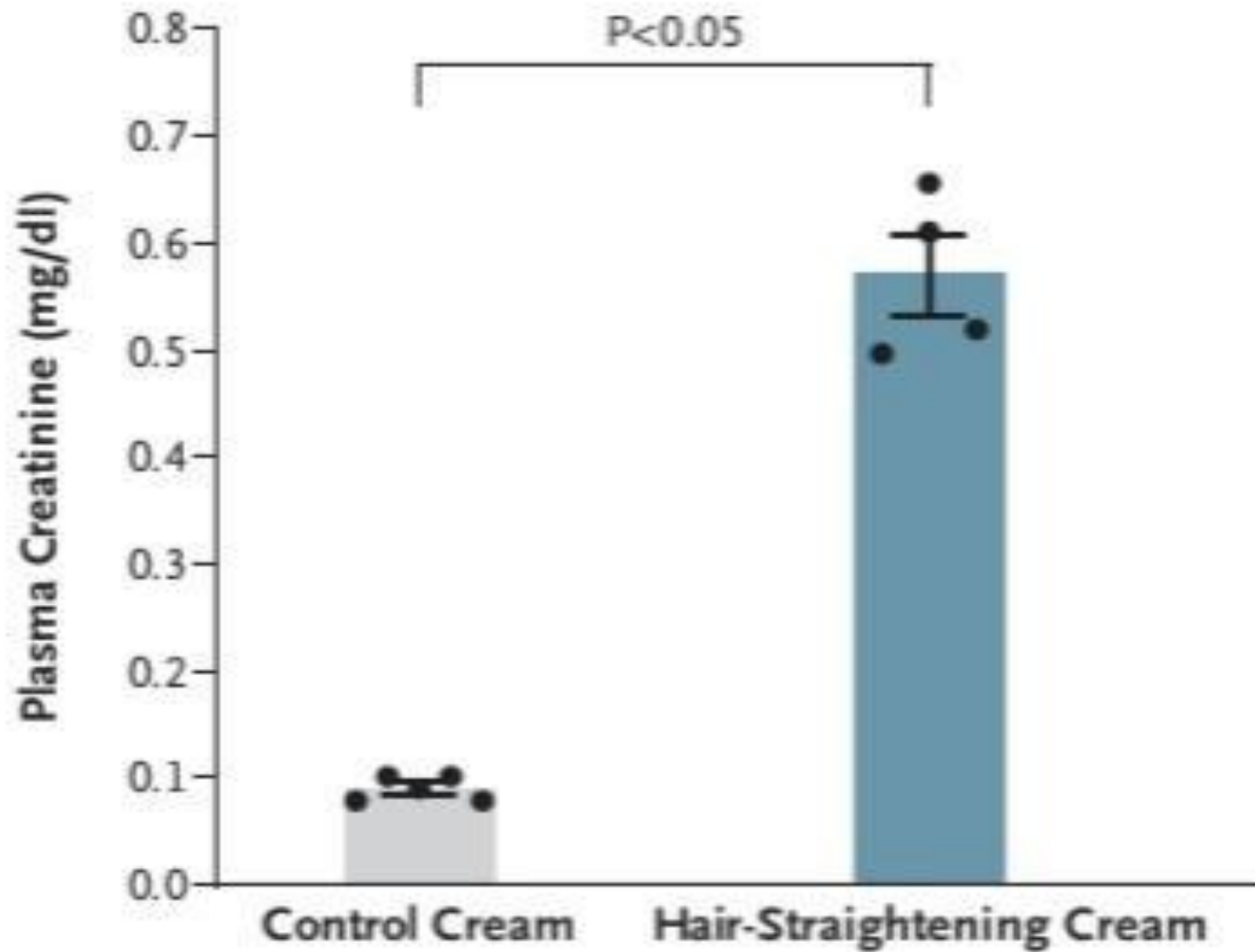




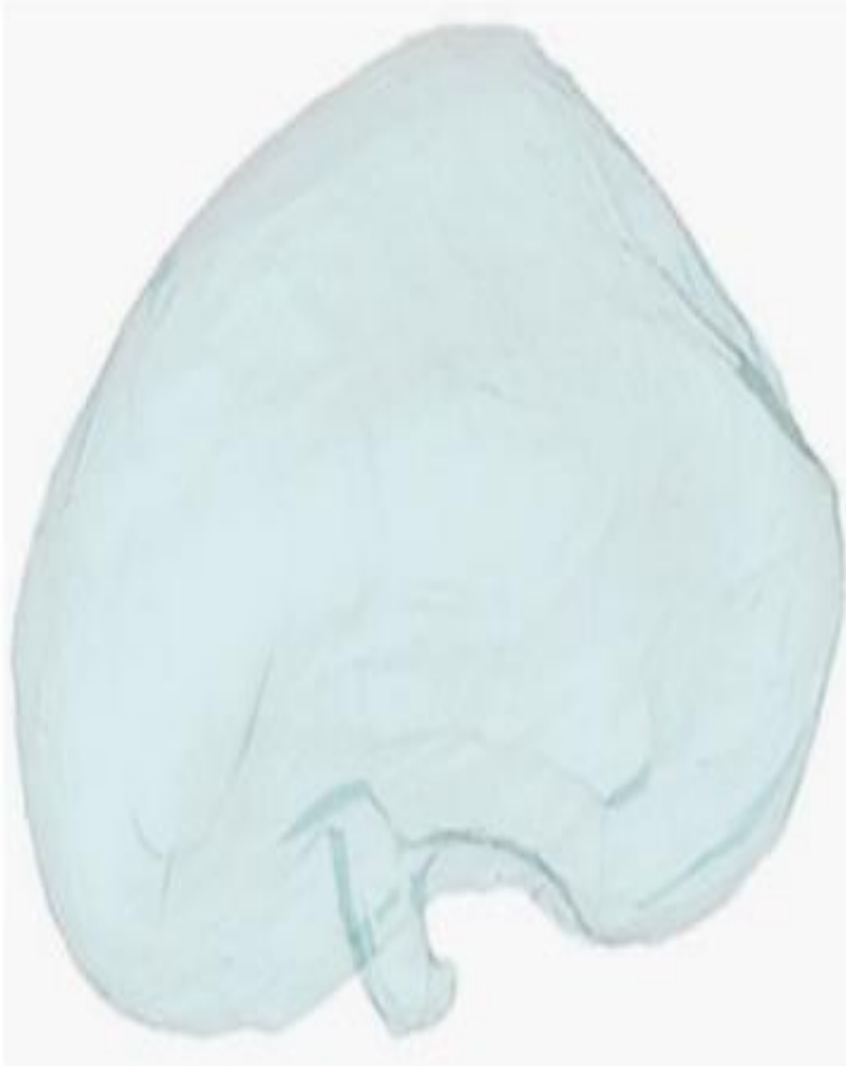
**B Calcium Oxalate Monohydrate Crystals in Murine Urine**



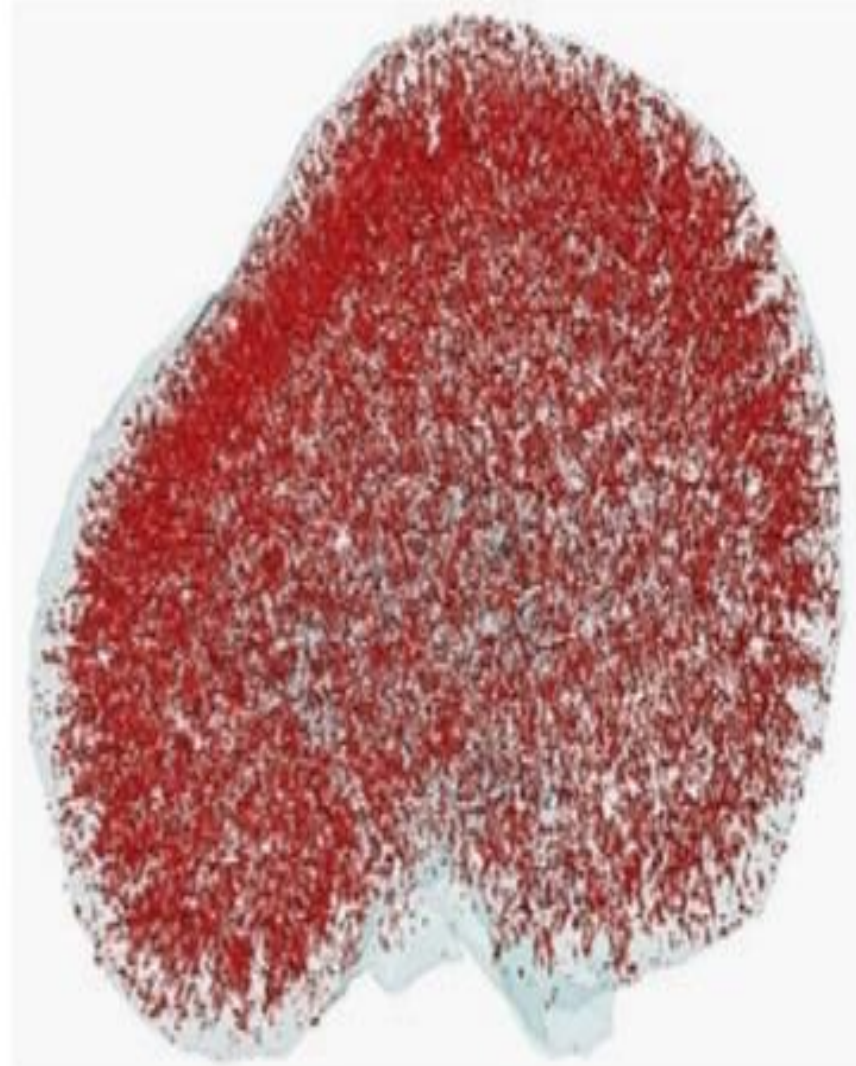
### C Murine Plasma Creatinine Level



**D** Murine Kidney after Exposure to Control Cream



**E** Murine Kidney after Exposure to Hair-Straightening Cream



## To summarize:

- These results provide evidence that hairstraightening cream containing glyoxylic acid is responsible for calcium oxalate–induced nephropathy after hair-straightening procedures
- products containing this compound should be avoided and, we would proffer, discontinued from the market.

Thank you