



Clinical vulnerability patterns in human *Cochliomyia hominivorax* myiasis in Southern Mexico: an exploratory analytical study

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INTRODUCTION & AIM

Human myiasis caused by *Cochliomyia hominivorax* remains a neglected tropical zoonosis in Latin America despite regional eradication programs targeting the New World screwworm. Contemporary epidemiological and vulnerability patterns in Mexico are poorly characterized. We conducted an analytical exploratory study to describe clinical distribution and identify factors associated with complicated outcomes in confirmed human cases reported in Southern Mexico.

METHODS

A retrospective observational exploratory study was conducted including 33 laboratory-confirmed human cases reported in the National Epidemiological Surveillance System (epidemiological week 29, 2025). Variables analyzed included age, sex, anatomical location, comorbidities, and clinical outcomes. Comorbidity was defined as documented chronic clinical conditions in the registry (e.g., diabetes mellitus, neoplasms, vascular disease, chronic kidney disease, malnutrition, alcohol use disorder). Age was summarized using median and interquartile range (IQR). Proportions were calculated with 95% confidence intervals (95% CI) using the Wilson method. Associations were assessed using Fisher's exact test and crude odds ratios (OR) with Haldane correction.

RESULTS & DISCUSSION

A total of 33 cases of human myiasis were analyzed from Chiapas and Campeche, Mexico (2025).

Age

Mean: **58.4 ± 19.6** years
Median: **60** years (IQR: **48–74**)
Range: **17–87** years

Sex

Male: **63.6%** (21/33)
Female: **36.4%** (12/33)

Age Distribution by Quintiles

≤48 years	49–55 years	56–67 years	68–77 years	≥78 years
21.2% (n=7)	18.2% (n=6)	24.2% (n=8)	15.2% (n=5)	21.2% (n=7)

Comorbidities

Any comorbidity: **75.8%** (25/33) [95% CI: 59.0–87.2%]
Multiple comorbidities (≥2): **21.2%** (7/33) [95% CI: 10.7–37.8%]
Neoplasia: **18.2%** (6/33) [95% CI: 8.6–34.4%]

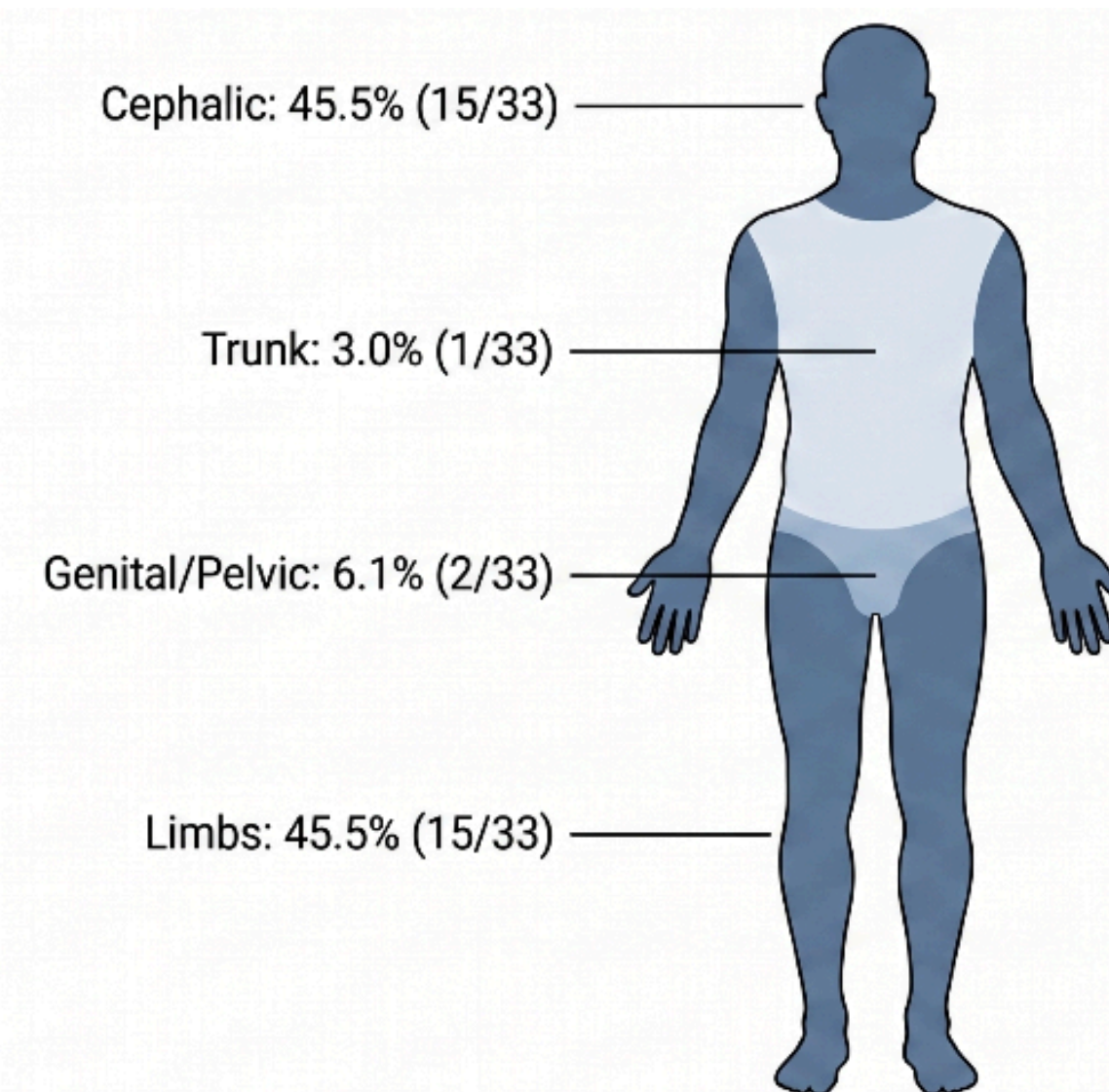
RESULTS & DISCUSSION

Anatomical Distribution of Myiasis Lesions (n = 33)

Outcomes

- Discharge with improvement: **75.8%** (25/33)
- Ambulatory management: **9.1%** (3/33)
- Hospitalization: **9.1%** (3/33)
- Transfer: **3.0%** (1/33)
- Mortality** (Case-fatality rate): **3.0%** (1/33) [95% CI: 0.5–15.3%]

Complicated evolution: **15.2%** (5/33) [95% CI: 6.7–30.9%] (*hospitalization, transfer, or death*)



Lesion Location Distribution
45.5% 6.1% 3.0%



Graphical representation of *C. hominivorax*

Bivariate Analysis

Strong Association: **Neoplasia and Cephalic Lesion** All 6 patients with neoplasia (100%) had cephalic lesions.

- Fisher's exact test: $p = 0.005$
- Crude OR (Haldane correction): **25.3** [95% CI: 1.28–498.9]

Age ≥60 years and Complicated Evolution

- Crude OR: **4.62** [95% CI: 0.46–46.7]
- Fisher's exact test: $p = 0.335$ (non-significant)

Other associations (Sex vs. lesion location; Any comorbidity vs. complicated evolution) were **not** statistically significant ($p > 0.05$).

CONCLUSION

Human *Cochliomyia hominivorax* myiasis in Southern Mexico predominantly affects patients with comorbidities and conditions favoring tissue exposure. The observed association between cephalic neoplasms and infestation suggests that exposed tumor lesions may play a key role in pathogenesis. These findings provide clinical evidence of vulnerability factors in this neglected zoonosis.

FUTURE WORK / REFERENCES

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