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RES-030

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Comparison of Treatment Outcomes Between Isavuconazole and Voriconazole for Suspected Invasive Aspergillosis: A Single-Center Retrospective Cohort Study

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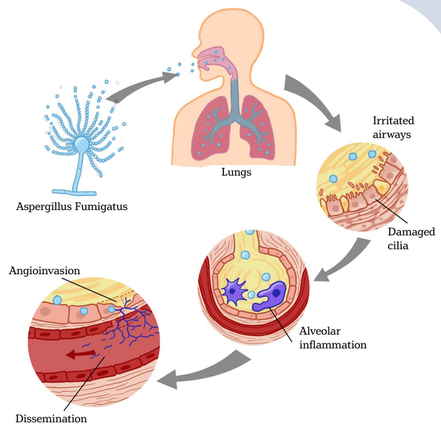
Background:

Invasive aspergillosis (IA) is a life-threatening infection and has been increasingly identified.



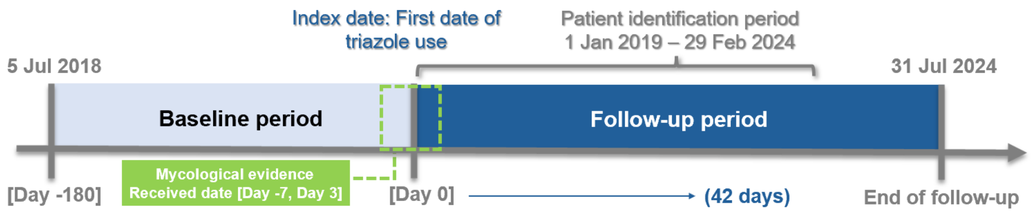
Source: Adapted from [Sarah Gaffney et al., APMIS. 2023].

According to published guidelines, voriconazole (VORI) is the first-line agent and isavuconazole (ISAV) plays an alternative role. However, supporting evidence is primarily derived from studies of heterogeneous populations with various fungal infections. This study aimed to evaluate treatment outcomes among patients with suspected IA who initiated ISAV or VORI.

Methods:

- This retrospective cohort study enrolled hospitalized non-HIV adults with clinical suspicion of IA and supporting mycological evidence who initiated ISAV or VORI as initial treatment at a tertiary medical center in Taipei, Taiwan (January 2019–February 2024).
- Patients who received ISAV or VORI for ≤ 2 days, exposed to amphotericin B or anti-mold triazoles in previous 6 months, were excluded.
- The primary outcome, 42-day in-hospital mortality, was analyzed by using Cox proportional hazards model. Sensitivity analyses were performed to validate major findings using a stricter definition of IA and inverse probability of treatment weighting.
- Drug safety, such as liver dysfunction, was also assessed.

Figure 1. Follow-up scheme



Results:

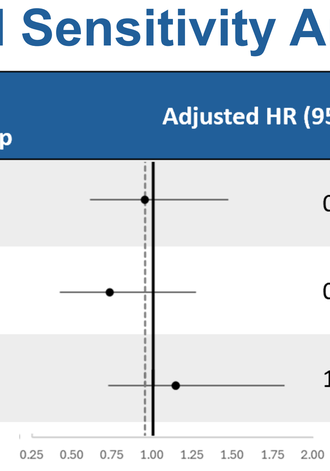
- Of the 407 patients included, 74 received ISAV and 333 received VORI. The crude 42-day in-hospital mortality were similar (33.8% vs 34.5%, HR: 1.03; 95% CI: 0.67–1.59). After adjustment for confounders including age, ICU admission, and immunosuppressive status, no significant difference was observed **(Table 2)**.
- Notably, ALT elevation >5× ULN occurred more frequently in the ISAV group (10.5% vs. 4.9%; p = 0.082), though not statistically significant.

Table 1. Baseline Characteristics

	ISAV (N=74)	VORI (N=333)	*p* value
Age median (IQR), y	72 (62, 81)	72 (62, 80)	0.890
Male	49 (66.2%)	207 (62.2%)	0.617
eGFR, median (IQR), ml/min/1.73m2	61.2 (28.5, 82.8)	76.9 (40.3, 96.3)	**0.011**
ALT, median (IQR), U/L	29 (17, 57)	26 (16, 50)	0.268
Antineoplastic drugs within 3 mo	30 (40.5%)	133 (39.9%)	0.924
Immunosuppressants within 3 mo	33 (44.6%)	74 (22.2%)	**<.001**
ICU on index date	29 (39.2%)	129 (38.7%)	0.943
Antibiotics on index date	67 (90.5%)	313 (94.0%)	0.280
• Anti-MDR Antibiotics	11 (14.9%)	62 (18.6%)	0.447
• SMX-TMP	23 (31.1%)	72 (21.6%)	0.082
• Ganciclovir/Valganciclovir	19 (25.7%)	47 (14.1%)	**0.015**

Table 2. Primary Outcome and Sensitivity Analysis

	No. of events / Total no. (%)			Adjusted HR (95% CI)	*p* value
	Total	ISAV group	VORI group		
Main analysis† (All patients)	140/407 (34.4)	25/74 (33.8)	115/333 (34.5)	0.95 (0.61-1.47)	0.815
Patients met specific mycological evidence†‡	90/252 (35.7)	16/53 (30.2)	74/199 (37.2)	0.73 (0.42-1.27)	0.267
IPTW§	128/407 (31.4)	56/197 (28.4)	72/210 (34.3)	1.14 (0.72-1.82)	0.579



† Adjusted for age, abnormal renal function (eGFR <60 ml/min/1.73 m²), abnormal liver function (ALT >120 U/L or T-bilirubin >2.4 mg/dL), ICU admission, use of antineoplastic drugs within the past 3 months, high-dose steroids within the past 30 days, and the use of ganciclovir/valganciclovir.
‡ Specific mycological evidence: GM antigen ≥1.0 or positive non-sputum PCR/culture.
§ After IPTW (Inverse Probability of Treatment Weighting), variables with ASD > 0.2 (index year, solid organ transplant history, hematological malignancy, and ESRD) were adjusted in the multivariable Cox regression.

Conclusion:

- ISAV demonstrated similar 42-day in-hospital mortality to VORI, which supports its role as a first-line therapy for suspected IA. Liver dysfunction during IA treatment warrants continued monitoring.

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