COMMUNITY-ONSET CANDIDEMIA: TRENDS OVER SEVEN YEARS
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Introduction
Candidemia is often hospital acquired. Most reported studies focus on nosocomial candidemia. With the inpatient-outpatient shift in healthcare, many cases are now acquired in the community. Whether community onset (CO) candidemia differs in risk factors, source and species distribution is uncertain. Epidemiologic data on CO candidemia remains limited. We present a review of candidemia cases in our hospital and a comparison of hospital onset (HO), community onset-healthcare associated (CO-CA) and community associated (CA) candidemia.

Materials and Methods
- We reviewed blood culture (BC) results 1/1/2010 - 12/31/2017.
- Selected patients with positive BC for Candida spp. Candidemia.
- Retrospectively reviewed their medical records to define the place of onset:
  - HO: ≤ 24 days after admission
  - CO: > 3 days after admission which was further defined as HCA or CA
- Recorded patient demographics, the source of candidemia and species distribution.
- Compared CA, CO-CA and HO cases.

Results
- We encountered 212 candidemia episodes (3.5% of bloodstream infection) among 190 patients. We included the first episode from each patient to maintain statistical independence.
- The rate of candidemia (0.6-1.2/1000 discharges) fluctuated over time without a clear trend.
- CO accounted for 86 (45.3%) episodes, 81 (42.6%) were CO-CA and 5 (2.6%) CA without healthcare exposure. The rate of CO and HO candidemia fluctuated without a discernable trend (Figure 1).
- Patient age was similar in CO-CA and HO cases (60.1 ± 17.0 vs. 59.9 ± 17.1 yrs). Risk factors were similar except for higher proportion of intravenous drug users (IVDA) in CA (Table).
- The source of candidemia and species distribution were similar except for higher proportion of soft tissue/bone (ST/B) sources and a trend toward higher frequency of urinary tract infection (UTI) in CA and CO-CA cases, respectively (Table).
- Comparison of cases with C. albicans and C. glabrata revealed that C. glabrata was more common in diabetics (47.1% vs. 23.3% in non-diabetics; p=0.001), and hemodialysis-dependent (H-D) cases (50.0% vs. 28.8%; p=0.03), and tended to be less common in UTI (24.2% vs. 33.8% in other sources; p=0.3).

Table: Comparison of CA, CO-CA and HO Candidemia Cases (results represent %)

<table>
<thead>
<tr>
<th>Onset (n)</th>
<th>Patient Characteristics</th>
<th>Source</th>
<th>Candida Species</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CAN</td>
<td>DM</td>
<td>H-D</td>
</tr>
<tr>
<td>CA (5)</td>
<td>0</td>
<td>0</td>
<td>60.0</td>
</tr>
<tr>
<td>CO-CA (81)</td>
<td>25.9</td>
<td>42.0</td>
<td>21.0</td>
</tr>
<tr>
<td>HO (104)</td>
<td>26.5</td>
<td>34.6</td>
<td>12.5</td>
</tr>
<tr>
<td>p*</td>
<td>0.5</td>
<td>0.1</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Patient Characteristics: Cancer; Diabetes; Hemodialysis; Intravenous drug users
Source: Vascular; Abdomen/pelvis; Urinary tract; Soft tissue/bone; Miscellaneous/unknown
Species: albicans; glabrata
a: determined using chi-square test

Figure 1: Candidemia Onset Fluctuation (%)

Figure 2: Distribution of C. albicans and C. glabrata in Candidemia (%)

Conclusions
- Candidemia remains a healthcare-related event.
- A significant portion nowadays is CO.
- Candidemia rate and species distribution did not change during the study period and were similar in CO and HO cases.
- UTI and ST/B were more frequent in CO cases.
- C. albicans predominated in CO and HO cases.
- C. glabrata surpassed C. albicans among diabetics and H-D in CO and HO cases.
- Antifungal therapy in CO-CA infections in high risk patients may be warranted.
- Since C. glabrata accounts for a sizable proportion of candidemia cases, rapid identification would likely help in selecting appropriate antifungal agents.

References