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Background

- Coagulase-positive *Staphylococcus aureus* are serious forms of bacteremia that contribute to community-associated and hospital-associated infections and can lead to severe clinical outcomes, high morbidity, and increased mortality in immunocompromised populations

Objectives

- To compare the risk factors and clinical outcomes among cancer patients diagnosed with bloodstream infection (BSI) with methicillin-susceptible *S. aureus* (MSSA) or methicillin-resistant *S. aureus* (MRSA)

Methods

- Retrospective cohort study on all patients diagnosed with an active solid tumor or hematologic cancer with positive blood culture for *S. aureus* from January 2009 to May 2019
- Demographics, comorbidities, malignancy type, venous access, neutropenia status, echocardiogram results, treatment (tx) duration, antibiotics usage pre/post culture, hospital LOS, infection severity, and 7-day and 30-day mortality
- Reviewed records after approval from the IRB

Conclusions

- Endocarditis with either MRSA or MSSA BSI is not a prominent finding among cancer patients at our institution. Given the extensive usage of CVCs and devices in patients with malignancies, prompt removal and antibiotic administration are essential to reduce morbidity; even then, the LOS for MRSA BSI remains longer than MSSA BSI
- MRSA and MSSA bacteremia were most common in heme malignancy, especially AML possibly due to mucositis and neutropenia, permitting microbe colonization of skin and GI tract bloodstream access from the central line or GI translocation. Also, the use of quinolone prophylaxis may select quinolone resistant MSSA and MRSA colonization and infection. Finally, pelvic cancers that obstruct urine flow may predispose to MSSA and MRSA bacteremia.

References

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Results

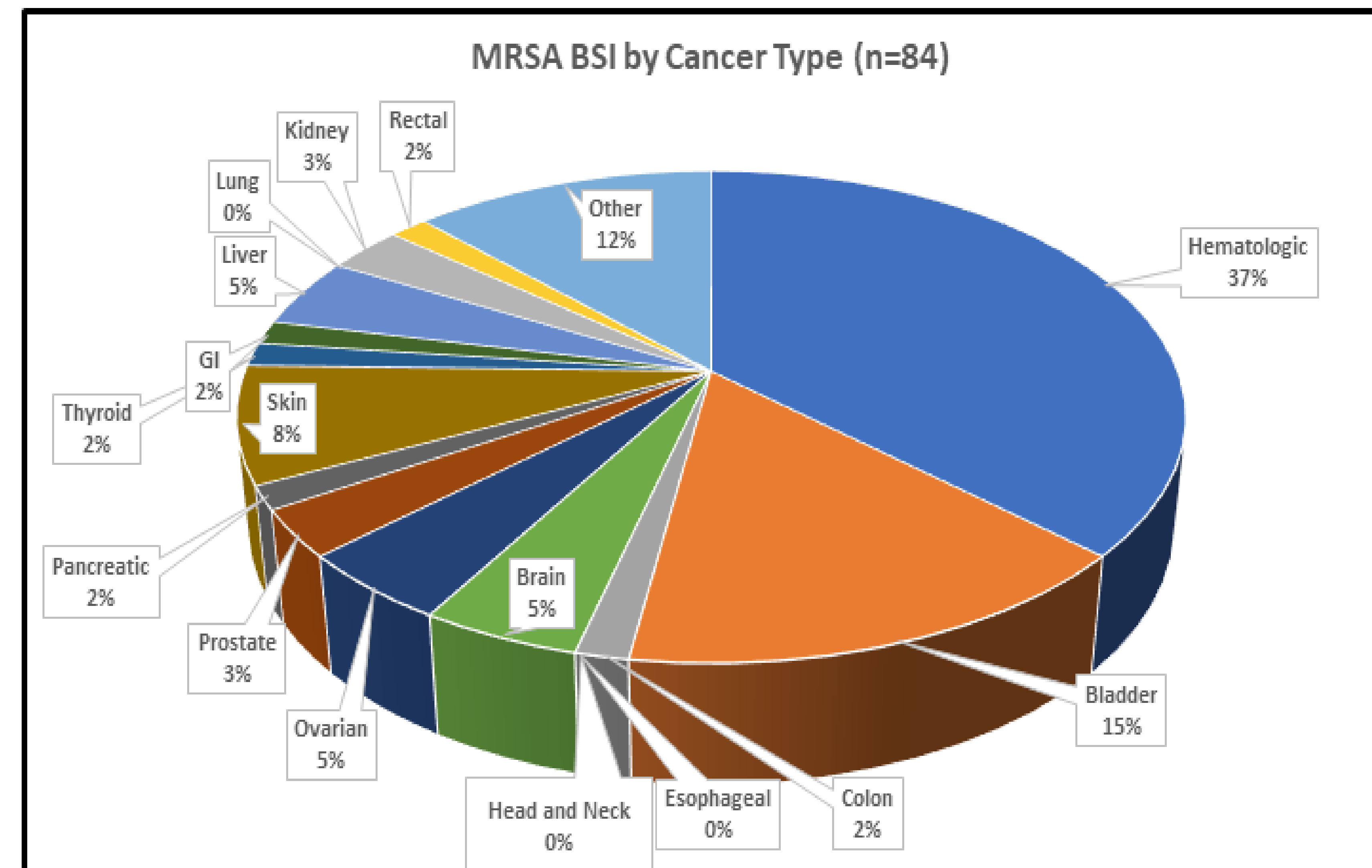


Figure 3. Pie chart of MRSA BSIs by Cancer Type (n=84)

- MRSA and MSSA bacteremia presented equally in hematologic malignancies, while MSSA was observed more in skin cancer than MRSA
- Most common solid tumor in both MRSA and MSSA bacteremia was bladder cancer
- Cancers that obstruct GU tracts may be associated with MRSA and MSSA from urine source as both were overrepresented in patients with bladder and rectal cancer
- For patients who underwent an echocardiogram, all had a negative result in both groups
- No significant difference for seven and 30-day mortality between the two groups

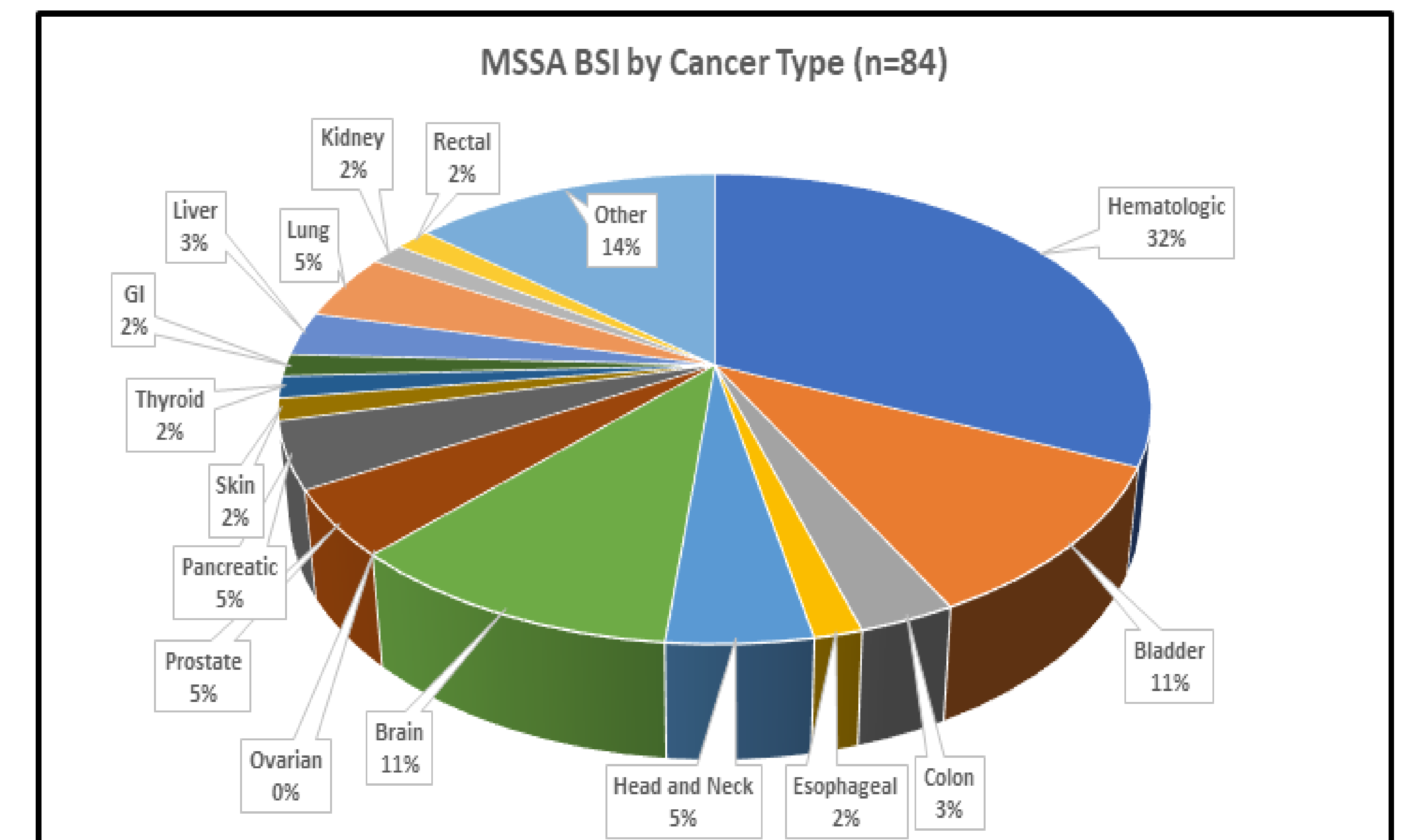


Figure 4. Pie chart of MSSA BSIs by Cancer Type (n=84)

- 168 cases of BSIs with MRSA or MSSA
- Mean age of 73.1 ± 14 (MRSA) and 70.1 ± 14.6 (MSSA)
- Mean hospital LOS was longer for MRSA cases (10.5 ± 13.5) versus MSSA cases (4.88 ± 9.1), ($P < 0.01$)
- Male patients were most of the sex ($P < 0.01$)
- CVC was removed in 72.6% of MSSA cases and 75% of MRSA cases
- Top 3 cancer types with MRSA: AML (16), Bladder (9), Multiple Myeloma (8)
- Top 3 cancer types with MSSA: AML (11), Bladder (5), ALL (5)

