Antibody-drug conjugate (ADC) therapy, while effective, presents several significant therapeutic challenges for metastatic breast cancer (MBC) patients. While effective, ADCs like SG and T-DXd often lead to severe side effects, including interstitial lung disease (ILD), pneumonia, and toxicities of the drugs. This retrospective study analyzed the effects of Bria-IMT (bria-emtansine), a next-generation ADC targeting IL-2, on 12 patients with MBC, previously refractory to multiple ADCs (Trodelvy, Enhertu, Kadcyla). This study investigated the potential benefits of Bria-IMT in ADC-refractory patients and its impact on overall survival and disease control.

### METHODS

The retrospective study included 12 ADC-refractory patients (8T/4F) treated with Bria-IMT (n = 12). Patients were evaluated for response, survival, and safety outcomes. The median (range) of prior treatments was 3 (2-11) with a median (range) of 2.2 (1.5-5.5) prior lines of treatment. Of the 12 patients, 9 had previously failed at least 1 ADC target, demonstrating the regimen's favorable safety profile. Future studies are warranted to confirm these results and explore the potential of Bria-IMT in ADC-refractory patients.

### RESULTS

- **Best Overall Response Rates (ORR):**
  - Bria-IMT: 13% (95% CI: 4–22)
  - TPC arm (CT206/CT716): 0% (CI: 0–6)
  - Single Arm Bria-IMT: 0% (CI: 0–6)

- **Best Clinical Benefit Response (CBR):**
  - Bria-IMT: 63% (95% CI: 48–79)
  - TPC arm: 100% (CI: 56–100)
  - Single Arm Bria-IMT: 56% (CI: 40–72)

- **Median (Range) of Treatment Duration:**
  - Bria-IMT: 4.8 (1.5–5.8) months
  - TPC arm: 2.0 (2.0–2.0) months
  - Single Arm Bria-IMT: 1.7 (1.7–2.0) months

- **Penetration rates:**
  - Bria-IMT: 63% (95% CI: 48–79)
  - TPC arm: 100% (CI: 56–100)
  - Single Arm Bria-IMT: 56% (CI: 40–72)

- **Adverse Events:**
  - Bria-IMT: Most Clinically Significant Grade 4 AE - elevated lipase (1 case)
  - TPC arm: Most Clinically Significant Grade 4 AE - hypothyroidism (1 case)
  - Single Arm Bria-IMT: Most Clinically Significant Grade 4 AE - hypothyroidism (1 case)

- **Survival Analysis:**
  - Bria-IMT: OS: Median 4.8 months (95% CI: 1.7–5.8 months)
  - TPC arm: OS: Median 2.0 months (95% CI: 2.0–2.0 months)
  - Single Arm Bria-IMT: OS: Median 1.7 months (95% CI: 1.7–2.0 months)

### CONCLUSION

The study demonstrated significant efficacy and safety outcomes for Bria-IMT in ADC-refractory MBC patients, providing a promising treatment option for patients with limited treatment options. Future studies are needed to confirm these results and explore the potential of Bria-IMT in broad clinical settings of heavily pretreated contemporary MBC patients.