retrospectively reviewed the patients suffering expanded bone exposure range during conservative treatment.

Results
Of 100 patients diagnosed with MRONJ in our hospital, 20 had renal dysfunction, and 47 discontinued antibiotics during clinical management. An expansion of bone exposure range during conservative treatment was observed in 11 patients. Of these 11 patients, 7 had renal dysfunction, 8 discontinued antibiotics during clinical management, and 5 discontinued but later resumed antibiotics due to exacerbation of symptoms.

Conclusions
As patients with renal dysfunction are at high risk of failure in the control of jaw bone exposure due to limited use of antibiotics, close monitoring (such as more frequent hospital visits) may be necessary when the temporary discontinuation of long-term administration of antibiotics is required.

eP034
A SYSTEMATIC LITERATURE REVIEW ON THE MANAGEMENT OF MEDICATION-RELATED OSTEONECROSIS OF THE JAW AMONG PATIENTS WITH CANCER

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Introduction
Medication-related osteonecrosis of the jaw (MRONJ) is a significant complication among cancer patients receiving Bone Targeting Agents (BTAs); however, debate is ongoing about the best management of MRONJ.

Objectives
To perform a systematic review of the literature on the management of MRONJ in cancer patients.

Methods
We searched MEDLINE and Embase for English-language literature from January 2009 to December 2016 using a predefined search strategy combining medical subject headings with text words. We included papers that described the treatment of MRONJ-affected cancer patients.

Results
We identified 38 papers; 37 case series or reports and one randomized trial. Management typically comprised of medical/non-surgical treatment, or surgical treatment ranging from superficial curettage, debridement, and sequestrectomy to continuity resection and reconstruction. Additional treatment involved the use of drug holiday, hyperbaric oxygen, low-level laser therapy, platelet-rich plasma or the use of fluorescence-guided surgery. One randomized study reported that laser therapy did not improve outcome among 20 surgically treated patients. In another cohort of 30 cases, a correlation between histology-verified necrosis-free resection margins and complete healing was reported. Of 588 included patients, 414 (70.4%) healed completely.

Conclusions
Due to the low level of evidence in the retrieved studies (lack of randomization and controls) and heterogeneous patient cohorts (various MRONJ stages and treatment modalities), no meta-analysis was feasible. Although some cases healed after conservative treatment, we observed a trend towards surgical resection of necrotic bone to achieve complete clinical healing at all MRONJ stages. Better quality studies are warranted, with standardized reporting of interventions and outcomes.

eP035
OSTEONECROSIS OF THE JAW RELATED TO NON-ANTIRESORPTIVE MEDICATIONS/THERAPIES: A SYSTEMATIC REVIEW

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Introduction
Osteonecrosis of the jaw (ONJ) related to medications without antiresorptive properties, such as antiangiogenics, tyrosine kinase inhibitors, mammalian target of rapamycin inhibitors, immune checkpoint inhibitors and conventional chemotherapy is increasingly reported.

Objectives
To review characteristics of ONJ in cancer patients receiving non-antiresorptive medications.

Methods
A systematic review of the literature between 2009-2017 was conducted by the BSG.

Results
Of 6,249 articles reviewed, 31 articles, describing 39 cases of ONJ related to non-antiresorptives were identified. No gender predilection was noted, median age was 64 years and ONJ stage 2 was most common, with a predilection for posterior mandible. Exposed bone, infectious manifestations and pain were common at diagnosis. In comparison to bone targeting agents (BTAs), radiology, histology and management were similar, with medication often discontinued. Delayed diagnosis (median 8 weeks) was noted. Important differences included earlier time to ONJ onset (median 20 weeks), absence of trigger event (41%), greater likelihood of healing and shorter healing time (median 8 weeks) as compared to BTA-related ONJ. Gastrointestinal cancers predominated, followed by renal cell carcinomas in contrast to breast, followed by prostate cancers in BTA-related ONJ, reflecting the different treatments.
Conclusions
Data about non-antiresorptive-related ONJ is sparse and based mostly on case-reports. ONJ related to ‘non-antiresorptives’ may have better prognosis compared to the BTA-related, suggested by greater likelihood of healing and shorter healing time. The delay to diagnosis highlights the need for more education. This is the first attempt to determine characteristics of the non-antiresorptive related ONJ and compare with the BTA-related ONJ.

**eP036**

**CHANGES IN EPIDEMIOLOGICAL CHARACTERISTICS OF PATIENTS DIAGNOSED WITH MEDICATION RELATED OSTEONECROSIS OF THE JAW (MRONJ): THE SHEBA MEDICAL CENTER EXPERIENCE OF THE PAST FIFTEEN YEARS**

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**Introduction**
MRONJ is affecting a dynamic population of patients, who received medication for osteoporosis and oncology treatment, the demographics are changing due to fluidity in treatment protocols. A change that the relevant health care givers need to be constantly up to date with.

**Objectives**
The aim of this study is to track the development of the epidemiological characteristics in the various patient populations diagnosed with MRONJ at the Sheba Medical Center.

**Methods**
The files of patients diagnosed with MRONJ from 2002-2016 were retrieved. MRONJ was diagnosed according to AAOMS diagnostic criteria. Data on demographics, medical background, type and duration of drug use and triggering events at presentation was collected.

**Results**
The study included 432 patients, 327 females (76%) and 105 males (24%). 63% of patients were in the 60-79 year age bracket. There was a sharp increase in cases between 2008-2009, followed by a steady increase 2009-2012, and a slight decrease 2012-2016. A decrease in the proportion of multiple myeloma patients and an increase in proportion of patients with bone metastases of solid tumors, presenting with MRONJ has been observed in the past few years. In addition, an increase in proportion of cases in osteoporosis patients compared with oncology patients is evident.

**Conclusions**
As a result of changes in drug and treatment protocols and increased awareness of oncology care givers, including referral and consultation with specialists in Oral Medicine, there has been a change in the demographics and presentation of the disease.

**eP037**

**DIFFICULTIES IN PROVIDING PALLIATIVE CARE IN RURAL INDIA (WEST BENGAL) – EXPERIENCE OF AN NGO**

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**Introduction**
As in any developing countries state of West Bengal in India has a huge burden of cancer patients in advanced stage coming from rural area where awareness regarding the usefulness of palliative care is rather poor.

**Objectives**
Our goal is to give a pain free good quality of life in these advanced stage cancer patients. Objective of this study is to identify the main difficulties in achieving the above goal in a rural village setting in India.

**Methods**
Advanced cancer patients in need of palliative care in various villages in of rural India were selected for this study. Their symptoms and management in that rural surroundings were evaluated by an NGO (under the guidance of a senior palliative care specialist) working in that area. An attempt was made to identify the main obstacles in getting proper palliative care in a rural setting.

**Results**
Pain, fatigue are the main symptoms affecting these patients. In most patients pain and other symptoms control was grossly inadequate due to lack of properly trained manpower in the rural India. However regular homecare visits by a group of social workers were of immense help in the last few months of life. NGO team was well guided by a palliative care specialist.

**Conclusions**
There is a wide gap of trained manpower in this filled in rural areas of India. Dedicated groups from rural area itself need encouragement and proper training, so that difficult symptoms can be managed locally along with necessary social and psychological support to these patients.

**eP038**

**CANCER PAIN CONTROL BEFORE AND AFTER REFERRAL TO PALLIATIVE CARE CENTER IN KUWAIT**

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**Introduction**
Still ineffective cancer pain management is a common problem especially among palliative care patients.

**Objectives**
Objectives: We aimed to assess the control of pain in cancer patients before and after referral to Palliative Care Center (PCC) in Kuwait.

**Methods**
Methods: Prospective cohort study was done on 35 adult patients with confirmed advanced cancer disease who were referred to PCC. Data was collected about pain severity and pain medications. Patients were assessed for pain on day of referral, day three, six and fourteen from referral to PCC.

**Results**
Results: Mean age was 58.7 (±14.79) years, 19 patients (54.3%) were males. Mean Pain scores at time of referral to PCC 6.17(±2.41) while at Day 3 after referral was 3.94(±1.76), Day 6 was 2.5(±1.94) and Day 14 was 1.7(+0.8). Before referral to palliative care services, 42.9% (n=15) had severe pain and no patient was pain free while at Day 3 after referral, only 8.6% (n=3) had severe pain and 40% (n=14) had mild pain. By Day 6, no patient had severe pain (p value <0.001). Using of adjuvant medications were statistically significant improved after referral to PCC. Before Referral, only 28.6% (n=10) of patients were on adjuvant medications but after referral, this percentage was increased to 71.4% (n=29) at Day 14 (p value <0.001).

**Conclusions**
Conclusion: Referral to palliative care services is significantly improving control of pain in patients with advanced cancer. Routine and earlier referral to palliative care services is recommended.