

Development of a Pharmacist-Managed Oral Chemotherapy Program in a Community Outpatient Cancer Center

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Disclosures

- No conflicts of interest
- IRB Exempt, approved by the Bozeman Health Deaconess Hospital P&T Committee
- Co-Investigators:
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 - Amanda Woloszyn, PharmD, BCPS

Bozeman Health Deaconess Hospital

- 86-bed non-profit, independent, community based hospital in Bozeman, Montana
- DNV (Det Norske Veritas) accredited
- Level III Trauma center
- Why Deaconess?
 - Deaconesses were women in the late 1800s- early 1900s who dedicated their lives to service under the auspices of various churches. In Bozeman, the deaconesses were affiliated with the Methodist Church



Learning Objective

- Recognize the pharmacist's role in managing patients on oral chemotherapy



Background

- Rapid development of new oral chemotherapy agents → new challenges to both patients and providers
- Focus shifts from inpatient to outpatient prescribing
- Issues include:
 - High medication costs
 - Medication procurement
 - Adherence
 - Patient education
 - Administration
 - Side-effect management
 - Procedures for safe handling and drug disposal

Background

- Pharmacists can play an essential role in patient care through:
 - Patient counseling
 - Medication dispensing
 - Patient tracking and follow-up
 - Patient satisfaction
- Last year at Bozeman Health, over 150 new patients received oral chemotherapy in our cancer center
 - Approximately 13 patients/month
 - Managed by 5 oncologists
- Those numbers are expected to ↑ as providers become more familiar with these novel medications

Pre-work Prior to Initiation

- Coordinated meetings with IT to set-up proper computer functionality for pharmacists
- Created workflow documents
 - For interdisciplinary oncology team
 - For oral chemo pharmacists
- Provided education to oncology team and pharmacists

Methods

- Pilot program was initiated February 2018
- All new patients receiving oral chemotherapy were referred via oncologist and enrolled in the program
- Close collaboration with interdisciplinary team
- Tracking system in place for all new patients, monitored throughout each cycle
- Pharmacist attempted to fill all prescriptions at retail pharmacy when possible
- Worked closely with financial case managers to ensure timely prior authorization and medication fills

Methods

- Pharmacist completed clinical review of treatment plan, medication education, monitored for drug interactions, patient adherence and dose-adjustments
- Patient educated to bring in medication prior to appointment
- During education, pharmacist provided: medication calendar, safe handling and drug disposal handouts, medication information and satisfaction survey
- After patient education, clinical note was completed by the pharmacist
- Follow-up telephone calls completed 1 week after starting oral chemotherapy and at least 1 week prior to starting second cycle

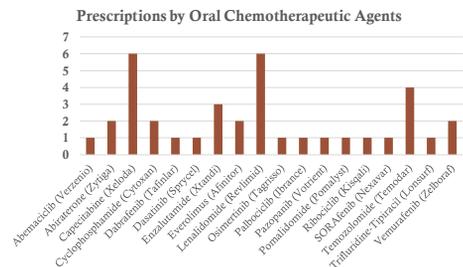
Outcomes Assessed

1. Number of patients counseled and enrolled in the program
2. Documented clinical interventions including drug-drug interactions, drug-food interactions, dose adjustments and supportive care
3. Patient and staff satisfaction
4. Assessment of patient adherence and overall medication knowledge via follow-up telephone calls and clinical notes
5. Financial sustainability of the program

Results

- Outcome #1
- Data was collected for 8 weeks from February 12th -April 8th 2018
 - 36 patients were enrolled
 - Estimated number of patients was 26
 - 28% more patients than expected
 - 100% of the patients were counseled by a pharmacist
 - In-person or via telephone
 - Top 3 oral chemotherapy medications prescribed include:
 - Lenalidomide (Revlimid®)
 - Capecitabine (Xeloda®)
 - Temozolomide (Temodar®)

Results



Results

Outcome #2

- Drug interactions identified: 17 (47%)
- Dose adjustments recommended: 5 (14%)
- Type of dose adjustments recommended: Renal
- Other recommendations:
 - Obtained EKG for QTc prolongation
 - Renal dose adjustments for supportive medications (acyclovir)
 - Recommendations for PCP prophylaxis

Patient Survey Results

Outcome #3

Parameter	Patients Strongly Agreeing, % (N= 8)
I appreciated a telephone call by the pharmacist prior to starting my oral chemotherapy	97.5
The pharmacist was professional, courteous, and friendly	97.5
The pharmacist provided quality verbal and written medication education	97.5
I was satisfied with the handouts provided to me, including the medication calendar	95
I was satisfied with the overall education that I received from the pharmacist prior to starting my new oral chemotherapy medication	97.5
I was satisfied with the oral chemotherapy education on safe handling and drug disposal that I was given	97.5
I was satisfied with the oral chemotherapy education on how to take my medication and common side effects	97.5

Results Needing Analysis

- Outcome #3: Provider satisfaction surveys
- Outcome #4: Long-term patient adherence and medication knowledge via follow-up telephone calls
- Outcome #5: Financial sustainability of the program

Conclusions

- Patient satisfaction was overall positive and well received
- Pharmacists intervened with several clinical interventions; primarily drug interactions and renal dose adjustments
- Tracking patients not only helped pharmacists, but the entire oncology team
 - Previously, patients were lost to follow-up and/or not receiving adequate dose adjustments
 - Currently, patients are monitored and contacted throughout each cycle

Current Limitations

- Program initiated late in year due to large pre-work load
- Consistent practice by all oncologists
 - Pharmacists make adjustments/create variable workflows based on provider preference
- Several steps throughout workflow process can be cumbersome
- Capturing oral chemotherapy prescriptions in our retail pharmacy
 - Need to be filled at specialty pharmacies/ mail order
 - Currently only 2 medications have been filled at our pharmacy
 - Dictated by insurance, high co-pays, unable to obtain medication

Future Directions

- Utilization of a pharmacy technician
 - Financial assistance, phone calls, work closely with retail pharmacy
- Additional computer software to assist with Rx processing
 - RxTrax and Pharmserve
- Expand our patient population
 - Include patients on anti-hormonals
- Justification of the program and financial support of the required full-time equivalents
 - Cost avoidance/ income from filling in-house prescriptions
 - Continue to collect pharmacist interventions

Assessment

At Bozeman Health, pharmacists are able to manage patients on oral chemotherapy by:

- Tracking patients during each cycle of oral chemotherapy
- Monitoring clinical interventions including drug interactions and dose adjustments
- Filling all oral chemotherapy medications in our in-house retail pharmacy
- Working closely with the interdisciplinary oncology team
- A,B,D
- All of the above

Questions?

Thank you for your time!



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