Telemedicine in Oncology Care During the COVID-19 Pandemic in a City Under a Zero-COVID Policy

Chan DCW MBBS [1], Cheung LWM MBBS [1], Tam WY MSc [1], Yuen CM BNurs [1], Cheung HY[1], Lai LS BNurs [1], Lau SF MSc [1], Hon HC MSc [1], Chan WK MSc[1], Lam CHE MSc [1], Wong WKH PhD [1], Shum CY MBBS [1], Yuen KT MBBS [1]

[1] Department of Oncology, Princess Margaret Hospital, HKSAR, China

ABSTRACT

Introduction: Telemedicine has the ability to improve patient access to care while maximizing social distancing between patients and healthcare workers. The aim of this pilot study was to compare average waiting-time between telehealth consultations versus face-to-face follow-up using a segregated-team approach.

Materials and Methods: We conducted a pilot study using an in-house telehealth platform *HA GO!* to conduct radiotherapy treatment review clinic, systemic anticancer therapy clinic, and survivorship follow-up clinic and compared the average waiting-time between telehealth versus face-to-face consultation in each clinic.

Results: Between June 10, 2022 and December 9, 2022, 21 patients participated in the telehealth program, 55 telehealth attendances were conducted (40 for radiotherapy treatment review clinic, 7 for systemic anticancer therapy clinic, and 8 survivorship follow-up clinic). A total of 2079 face-to-face consultations were conducted during June, 2022 (293 radiotherapy treatment review clinic, 1356 systemic anticancer therapy clinic, and 430 survivorship follow-up clinic). Mean waiting time for telehealth versus face-to-face follow-up for radiotherapy treatment review were 26 minutes vs 64 minutes (p<0.001), systemic anticancer therapy review 47 minutes vs. 120 minutes (p<0.001), and survivorship follow-up 31 minutes vs. 154 minutes (P<0.001), respectively. As of March 15, 2023, all patients (31/31) were satisfied with their tele-consultation. Most patients (94%, 29/31) believed telemedicine was able to take care of their needs. Most patients (97%, 30/31) would like to continue using telemedicine for follow-up if deemed clinically suitable.

Conclusions: Telemedicine has significant potential in reducing oncology specialist outpatient clinic waiting time. Delivery of telehealth can facilitate the government's healthcare policy by reducing hospital dwelling time and also aid in transitioning to a mitigation strategy during the fight against the COVID-19 pandemic while maintaining continuity of care for cancer patients.

INTRODUCTION

- Social determinants of health can have a great impact on cancer care in regions under a Zero-COVID policy.
- Restrictions on elective procedures, mandates for social distancing, and stay-in-place orders each present barriers for cancer care delivery during the pandemic.
- In a city with high population density like Hong Kong, telemedicine has the ability to improve patient access to care while maximizing social distancing between patients and healthcare workers.
- By reducing patient hospital dwelling time, cross infections and manpower exhaustion can be prevented, workflow efficiency can be sustained using a segregated-team workflow.
- The aim of this pilot study was to compare average waiting-time between telehealth consultations versus face-to-face follow-up.

METHODS AND MATERIALS

- We conducted a pilot study using an in-house video-based telehealth platform ***HA GO!*** to conduct consultations in 3 types of oncology clinics using a segregated-team approach and compared the average waiting-time between telehealth versus face-to-face consultation in each clinic:
- The 3 types of clinics under study:
  1. radiotherapy treatment review clinic (TRT-T)
  2. systemic anticancer therapy clinic (CAS-T)
  3. survivorship follow-up clinic (GEN-T)
- Satisfaction survey was conducted at the end of the telemedicine treatment journey

General Inclusion criteria
Stable patient with PS ≤ 1
Relatively asymptomatic with no significant treatment toxicities, CTCAE Grade ≤ 1
Able to manipulate a smartphone, or with family members available to assist
Has a smart phone with HA Go app installed and good network connection at home
Able to communicate in Cantonese/ Mandarin/ English without need of a translator
Clinic-specific Inclusion criteria
Radiotherapy treatment review clinic: patients receiving pelvic RT
Systemic anti-cancer therapy clinic: prostate cancer patients on LHRHa, antiandrogen, or androgen receptor inhibitor
Survivorship clinic: prostate cancer survivors, thyroid cancer survivors (post treatment in remission ≥2 years)
Exclusion criteria
Physically not in HK
Requires sick leave for tele-consultation
Suspected disease progression and/or with very symptomatic disease
Presence of any ≥ CTCAE grade 3 toxicities
Has severe hearing/ visual impairment to an extent that a video call is not possible
Has any cognitive/ physical impairment affecting his/ her ability to express his/ herself verbally
Unstable WIFI/ network at home

Table 1. Institutional telehealth inclusion/exclusion criteria

RESULTS

- Between June 10, 2022 and December 9, 2022, 21 patients participated in the telemedicine program
- 55 telehealth attendances were conducted (40 for radiotherapy treatment review clinic, 7 for systemic anticancer therapy clinic, and 8 survivorship follow-up clinic).
- A total of 2079 face-to-face consultations were conducted during June, 2022
  - 293 radiotherapy treatment review clinic
  - 1356 systemic anticancer therapy clinic
  - 430 survivorship follow-up clinic

Patient characteristics	
Total No. of Patients	32
Age	
Median (range)	66 (32-85)
Gender	
Male	26
Female	7
Radiotherapy treatment review clinic	
Prostate cancer (PC)	
Localized - High risk	10
Localized - Intermediate risk	1
Localized - Low risk	2
Metastatic prostate cancer	1
Endometrial cancer	1
Systemic anti-cancer treatment clinic	
Prostate cancer (PC)	
Localized - High risk (4 of 5 initially from TRTT)	5
Metastatic castration sensitive PC	1
Metastatic castration refractory PC	3
Survivorship clinic	
Thyroid cancer	8
Prostate cancer	4

Table 2. Baseline patient characteristics in Mar, 2023

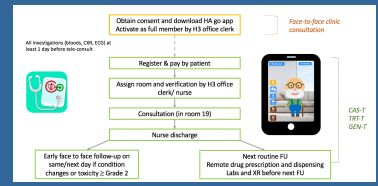

Figure 1. Sample telemedicine workflow

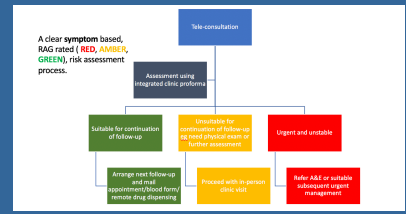

Figure 2. Triage diagram during tele-consultation

- Mean waiting time for telehealth versus face-to-face follow-up for
  - Radiotherapy treatment review clinic: 26 mins vs 64 mins (p<0.001)
  - Systemic anticancer therapy clinic::47 mins vs. 120 mins (p<0.001)
  - Survivorship follow-up clinic: 31 mins vs. 154 mins (P<0.001)
- As of March 15, 2023, patients who completed the satisfactory survey demonstrated:
  - Nearly all patients (97%, 30/31) were satisfied with their tele-consultation using ***HA GO!***.
  - Most patients (94%, 29/31) believed telemedicine was able to take care of their needs.
  - Most patients (97%, 30/31) would like to continue using telemedicine for follow-up if deemed clinically suitable.

DISCUSSION

- Quality research is needed across all areas of telemedicine, especially oncology care
- Possible future applications of ***HA GO!*** include electronic patient symptom reporting being incorporated into a risk stratified triage workflow
- Patient-centered care using telehealth can assist in eliminating barriers to care
- Since 2023, electronic payment and remote drug delivery function has been added
- Best practices should be identified & disseminated to enhance telehealth performance.

Potential areas where telemedicine can be applied:

- New patient consultations; these may be followed by face-to-face visits;
- Medication prescribing and management;
- Pre-chemotherapy or other pre-therapy evaluations;
- Acute care issues that could be addressed via routine outpatient care rather than A&E visits and admissions;
- Discussion of results, such as lab and imaging studies;
- Supportive care visits including financial, social work, nutrition visits;
- Oral drug compliance and adherence evaluations;
- Distress screening and interventions;
- Chronic care management;
- Patient education on chemotherapy and other treatments;
- Counseling;
- Management of long-term treatment;
- Post-discharge coordination, supported by remote-monitoring capabilities;
- Routine follow-up;
- Survivorship visits;
- Wellness interventions;
- Palliative care, including hospice consults and follow up visits;
- Advance care planning

Others:

- When access to care issues exist;
- Consent form discussions pre-research trials prior to signatures;
- Family conferences for when multiple family members would like to join and patient desires;
- Genetic counseling visits and evaluations;
- Second opinion evaluations to facilitate treatment in a timely manner.

CONCLUSIONS

- Telemedicine using a segregated-team approach significantly improved waiting time in oncology follow-up consultations in carefully selected patients
- Telemedicine allowed patients to wait at home remotely to reduce patient hospital dwelling time and enhance social distancing during the covid-19 pandemic
- Telemedicine allowed workflow reshuffling post-consultation and allowed drug dispensing to be handled remotely
- Patients were satisfied with tele-consultations and wished to continue using this technology even after the pandemic