

**Qi-yong Hemis Ai**  
(Research assistant professor)



- **QUALIFICATIONS:**

Doctor of Philosophy in Imaging and Interventional Radiology (The Chinese University of Hong Kong)	2017
Master of Medicine (Wuhan University)	2014
Bachelor of Medicine (Wuhan University)	2012

- **BRIEF OUTLINE OF EXPERIENCE AND POSTS HELD:**

Research assistant professor (The Hong Kong Polytechnic University)	Since Oct. 2021
Post-doctoral Fellow (The Chinese University of Hong Kong)	Oct. 2018 – Sept. 2021
Research Assistant (The Chinese University of Hong Kong)	Aug. 2017 - Sept. 2018

- **RESEARCH INTERESTS:**

Clinical applications of MRI in nasopharyngeal cancer  
Clinical applications of functional MRI techniques in head and neck  
Clinical applications of artificial intelligence in head and neck imaging

- **SERVICE TO PROFESSIONAL & SCIENTIFIC BODIES, CONSULTANCY, MEMBERSHIP OF PROFESSIONAL & LEARNED SOCIETIES:**

Editorial board member

BMC Medical Imaging

- **REPRESENTATIVE PUBLICATIONS (JOURNAL ARTICLES, BOOK CHAPTERS, MONOGRAPHS AND CONFERENCE PAPERS; TOTAL> “NUMBER”):**

Publications

**First Author or corresponding author (\*)**

1. Wong LM, **Ai QYH\***, Mo FKF, Poon DMC, King AD. Convolutional neural network in nasopharyngeal carcinoma: how good is automatic delineation for primary tumor on a non-contrast-enhanced fat-suppressed T2-weighted MRI? *Japanese Journal of Radiology*. 2021 doi: 10.1007/s11604-021-01092-x. (Impact factor: 2.374; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 85/134).
2. **Ai QYH\***, Zhang H, Jiang B, So TY, Mo FKF, Qamar S, Chen W, King AD. Test-retest repeatability of T1rho (T1p) MR imaging in the head and neck. *European Journal of*

- Radiology**. 2021 Feb;135:109489. (Impact factor: 3.528; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 47/134).
3. **Ai QYH**, Chen W, So TY, Lam WKJ, Jiang B, Poon DMC, Qamar S, Mo FKF, Blu T, Chan Q, Ma BBY, Hui EP, Chan KCA, King AD. Quantitative T1p MRI of the Head and Neck Discriminates Carcinoma and Benign Hyperplasia in the Nasopharynx. **American Journal of Neuroradiology**. 2020 Dec;41(12):2339-2344. (Impact factor: 3.825; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 40/134).
  4. So TY, **Ai QYH\***, Lam WKJ, Qamar S, Poon DMC, Hui EP, Mo FKF, Chan KCA, King AD. Intravoxel incoherent motion diffusion-weighted imaging for discrimination of benign and malignant retropharyngeal nodes. **Neuroradiology**. 2020 Dec;62(12):1667-1676. (Impact factor: 2.804; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 69/134).
  5. **Ai QY**, King AD, So TY, Lam WKJ, Mo FKF, Tse IOL, Woo JKS, Chan KCA. MRI of benign hyperplasia in the nasopharynx: is there an association with Epstein-Barr virus? **Clinical Radiology**. 2020 Sep;75(9):711.e13-711.e18. (Impact factor: 2.350; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 88/134).
  6. **Ai QY**, King AD, Poon DMC, Mo FKF, Hui EP, Tong M, Ahuja AT, Ma BBY, Chan ATC. Extranodal extension is a criterion for poor outcome in patients with metastatic nodes from cancer of the nasopharynx. **Oral Oncology**. 2019 Jan;88:124-130. (Impact factor: 5.337; Ranking [Oncology] 82/244).
  7. **Ai QY**, King AD, Chan JSM, Chen W, Chan KCA, Woo JKS, Zee BCY, Chan ATC, Poon DMC, Ma BBY, Hui EP, Ahuja AT, Vlantis AC, Yuan J. Distinguishing early-stage nasopharyngeal carcinoma from benign hyperplasia using intravoxel incoherent motion diffusion-weighted MRI. **European Radiology**. 2019 Oct;29(10):5627-5634. (Impact factor: 5.315; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 22/134).
  8. **Ai QY**, King AD, Mo FKF, Law BKH, Bhatia KS, Poon DMC, Kam MKM, Ma BB. Staging nodal metastases in nasopharyngeal carcinoma: which method should be used to measure nodal dimension on MRI? **Clinical Radiology**. 2018 Jul;73(7):640-646. (Impact factor: 2.350; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 88/134).
  9. **Ai QY\***, Hu CW, Bhatia KS, Poon DMC, Hui EP, Mo FKF, Law BKH, Tong M, Ma BB, Chan ATC, King AD. Nasopharyngeal carcinoma: relationship between invasion of the prevertebral space and distant metastases. **European Archives of Otorhinolaryngology**. 2018 Feb;275(2):497-505. (Impact factor: 2.503; Ranking [Otorhinolaryngology] 15/44).
  10. **Ai QY**, King AD, Mo FKF, Law BKH, Bhatia KS, Ma BB, Poon DMC, Kam MKM. Prediction of distant metastases from nasopharyngeal carcinoma: Improved diagnostic performance of MRI using nodal volume in N1 and N2 stage disease. **Oral Oncology**. 2017 Jun;69:74-79. (Impact factor: 5.337; Ranking [Oncology] 82/244).
  11. **Ai QY**, King AD, Law BK, Yeung DK, Bhatia KS, Yuan J, Ahuja AT, Wong LY, Ma BB, Mo FK, Kam MK. Diffusion-weighted imaging of nasopharyngeal carcinoma to predict distant metastases. **European Archives Otorhinolaryngology**. 2017 Feb;274(2):1045-

1051. (Impact factor: 2.503; Ranking [Otorhinolaryngology] 15/44).

**Co-author**

1. Wong LM, **Ai QYH**, Poon DMC, Tong M, Ma BBY, Hui EP, Shi L, King AD. A convolutional neural network combined with positional and textural attention for the fully automatic delineation of primary nasopharyngeal carcinoma on non-contrast-enhanced MRI. **Quantitative Imaging in Medicine Surgery**. Doi: 10.21037/qims-21-196. (Impact factor: 3.837; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 39/134).
2. Liu Z, Li H, Yu K, Xie SH, King AD, **Ai QYH**, Chen WJ, Chen XX, Lu ZJ, Tang LQ, Wang L, Xie CM, Ling W, Lu YQ, Huang QH, Coghill AE, Fakhry C, Pfeiffer RM, Zeng YX, Cao XM, Hildesheim A. Comparison of new magnetic resonance imaging grading system to conventional endoscopy for the early detection of nasopharyngeal carcinoma. **Cancer (Accepted for publication)**. (Impact factor: 6.86; Ranking [Oncology] 48/242).
3. Hui EP, Ma BBY, Lam WKJ, Chan KCA, Mo F, **Ai QYH**, King AD, Wong CH, Wong KCW, Lam DCM, Tong M, Poon DMC, Li L, Lau TKH, Wong KH, Lo YMD, Chan ATC. Dynamic Changes of Post-Radiotherapy Plasma Epstein-Barr Virus DNA in a Randomized Trial of Adjuvant Chemotherapy Versus Observation in Nasopharyngeal Cancer. **Clinical Cancer Research**. 2021 Mar 10. doi: 10.1158/1078-0432.CCR-20-3519. (Impact factor: 12.531; Ranking [Oncology] 18/242).
4. Ko KWS, Bhatia KS, **Ai QYH**, King AD. Imaging of head and neck mucosa-associated lymphoid tissue lymphoma (MALToma). **Cancer Imaging**. 2021 Jan 12;21(1):10. (Impact factor: 3.909; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 38/134).
5. Wong LM, King AD, **Ai QYH**, Lam WKJ, Poon DMC, Ma BBY, Chan KCA, Mo FKF. Convolutional neural network for discriminating nasopharyngeal carcinoma and benign hyperplasia on MRI. **European Radiology**. 2020 Nov 25. doi: 10.1007/s00330-020-07451-y. (Impact factor: 5.315; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 22/134).
6. Zhu J, Li L, Tong J, Hui C, Wong CH, Lo KW, Chan R, **Ai QY**, Hui EP, Chan AT, To KF, Tao Q, Ma BB. Targeting the polycomb repressive complex-2 related proteins with novel combinational strategies for nasopharyngeal carcinoma. **American Journal of Cancer Research**. 2020 Oct 1;10(10):3267-3284. (Impact factor: 6.166; Ranking [Oncology] 64/242).
7. Qamar S, King AD, **Ai QYH**, Mo FKF, Chen W, Poon DMC, Tong M, Ma BB, Yeung DK, Wang YX, Yuan J. Pre-treatment amide proton transfer imaging predicts treatment outcome in nasopharyngeal carcinoma. **European Radiology**. 2020 Nov;30(11):6339-6347. (Impact factor: 5.315; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 22/134).
8. Qamar S, King AD, **Ai QYH**, So TY, Mo FKF, Chen W, Poon DMC, Tong M, Ma BB, Hui EP, Yeung DK, Wang YX, Yuan J. Pre-treatment intravoxel incoherent motion diffusion-weighted imaging predicts treatment outcome in nasopharyngeal carcinoma. *Eur J Radiol*. 2020 Aug;129:109127. (Impact factor: 3.528; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 47/134).

9. King AD, Woo JKS, **Ai QY**, Mo FKF, So TY, Lam WKJ, Tse IOL, Vlantis AC, Yip KWN, Hui EP, Ma BBY, Chiu RWK, Chan ATC, Lo YMD, Chan KCA. Early Detection of Cancer: Evaluation of MR Imaging Grading Systems in Patients with Suspected Nasopharyngeal Carcinoma. **American Journal of Neuroradiology**. 2020 Mar;41(3):515-521. (Impact factor: 3.825; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 40/134).
10. Hui EP, Li WF, Ma BB, Lam WKJ, Chan KCA, Mo F, **Ai QYH**, King AD, Wong CH, Guo R, Poon DMC, Tong M, Li L, Lau TKH, Wong KCW, Lam DCM, Lo YMD, Ma J, Chan ATC. Integrating postradiotherapy plasma Epstein-Barr virus DNA and TNM stage for risk stratification of nasopharyngeal carcinoma to adjuvant therapy. **Annals of Oncology**. 2020 Jun;31(6):769-779. (Impact factor: 32.976; Ranking [Oncology] 7/242).
11. So TY, **Ai QY**, Ma BBY, King AD. Early intra-treatment diffusion weighted magnetic resonance imaging in patients with recurrent nasopharyngeal carcinoma treated with nivolumab. **International Journal of Otorhinolaryngology and Head Neck Surgery**. 2020 6(3):568-573.
12. King AD, Woo JKS, **Ai QY**, Chan JSM, Lam WKJ, Tse IOL, Bhatia KS, Zee BCY, Hui EP, Ma BBY, Chiu RWK, van Hasselt AC, Chan ATC, Lo YMD, Chan KCA. Complementary roles of MRI and endoscopic examination in the early detection of nasopharyngeal carcinoma. **Annals of Oncology**. 2019 Jun 1;30(6):977-982. (Impact factor: 32.976; Ranking [Oncology] 7/242).
13. Qamar S, King AD, **Ai QY**, Law BKH, Chan JSM, Poon DMC, Tong M, Mo FKF, Chen W, Bhatia KS, Ahuja AT, Ma BBY, Yeung DK, Wang YX, Yuan J. Amide proton transfer MRI detects early changes in nasopharyngeal carcinoma: providing a potential imaging marker for treatment response. **European Archives of Otorhinolaryngology**. 2019 Feb;276(2):505-512. (Impact factor: 2.503; Ranking [Otorhinolaryngology] 15/44).
14. Hui SCN, Wong SKH, **Ai QY**, Yeung DKW, Ng EKW, Chu WCW. Observed changes in brown, white, hepatic and pancreatic fat after bariatric surgery: Evaluation with MRI. **European Radiology**. 2019 Feb;29(2):849-856. (Impact factor: 5.315; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 22/134).
15. Law BKH, King AD, **Ai QY**, Poon DMC, Chen W, Bhatia KS, Ahuja AT, Ma BB, Ka-Wai Yeung D, Fai Mo FK, Wang YX, Yuan J. Head and Neck Tumors: Amide Proton Transfer MRI. **Radiology**. 2018 Sep;288(3):782-790. (Impact factor: 11.105; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 2/134)
16. King AD, Wong LYS, Law BKH, Bhatia KS, Woo JKS, **Ai QY**, Tan TY, Goh J, Chuah KL, Mo FKF, Chan KCA, Chan ATC, Vlantis AC. MR Imaging Criteria for the Detection of Nasopharyngeal Carcinoma: Discrimination of Early-Stage Primary Tumors from Benign Hyperplasia. **American Journal of Neuroradiology**. 2018 Mar;39(3):515-523. (Impact factor: 3.825; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 40/134).
17. Yuan H, **Ai QY**, Kwong DL, Fong DY, King AD, Vardhanabhuti V, Lee VH, Khong PL. Cervical nodal volume for prognostication and risk stratification of patients with nasopharyngeal carcinoma, and implications on the TNM-staging system. **Scientific Reports**. 2017 Sep 4;7(1):10387. (Impact factor: 4.379; Ranking [Multidisciplinary sciences] 17/73).

18. Hung KF, **Ai QY**, Fan SC, Wang F, Huang W, Wu YQ. Measurement of the zygomatic region for the optimal placement of quad zygomatic implants. **Clinical Implant Dentistry and Related Research**. 2017 Oct;19(5):841-848. (Impact factor: 3.932; Ranking [Dentistry, Oral Surgery & Medicine] 18/91).
19. Law BK, King AD, Bhatia KS, Ahuja AT, Kam MK, Ma BB, **Ai QY**, Mo FK, Yuan J, Yeung DK. Diffusion-Weighted Imaging of Nasopharyngeal Carcinoma: Can Pretreatment DWI Predict Local Failure Based on Long-Term Outcome? **American Journal of Neuroradiology**. 2016 Sep;37(9):1706-12. (Impact factor: 3.825; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 40/134).
20. Zhang Z, Winston GP, Zhao HT, Oei EH, **Ai QY**, Loffroy R, Lin T, Shen Y, Ng CK, Liu H, Civelek AC, Han Z, He YM, Ji LY, Wáng YX. Focus on China: should clinicians engage in research? and lessons from other countries. **Quantitative Imaging in Medicine and Surgery**. 2014 Oct;4(5):413-25. (Impact factor: 3.837; Ranking [Radiology, Nuclear Medicine and Medical Imaging] 39/134).
21. Deng Z, Zou H, Cai L, Ping A, Wang Y, **Ai QY**. The retrospective analysis of posterior short-segment pedicle instrumentation without fusion for thoracolumbar burst fracture with neurological deficit. **Scientific World Journal**. 2014 Mar 2;2014:457634.

#### **Conference abstracts**

1. Wong ML, Hung KF, **Ai QY**, Leung YY, King AD. Automatic detection of inflammatory maxillary sinus lesions on low-dose cone-beam CT using convolutional neural network. *European Society of Head and Neck Radiology Annual Meeting and Refresher Course 2021, Stay-at-home Edition*.
2. Zhang R, **Ai QYH**, Wong LM, Qamar S, King AD. Conventional MRI-based radiomics analysis for discriminating salivary gland tumours. *International Cancer Imaging Society Meeting and 20<sup>th</sup> Annual Teaching Course, 2021, Virtual Meeting*.
3. **Ai QY**, Chen W, Lam WKJ, Poon DMC, King AD. T1rho MRI of nasopharyngeal carcinoma and benign hyperplasia in the nasopharynx. *European Society of Head and Neck Radiology Annual Meeting and Refresher Course 2019, Sinici, Italy*.
4. Wong LM, **Ai QY**, Shi L, King AD. Deep-learning Automatic Delineation of Primary Tumor Volume in Nasopharyngeal Carcinoma on T2W Fat-suppressed MR Images. *International Cancer Imaging Society Meeting and 18<sup>th</sup> Annual Teaching Course, 2019, Verona, Italy. (First Prize)*.
5. Qamar S (Presenter), King AD, **Ai QY**, Poon DMC, Wang YX, Chen W. Pretreatment intravoxel incoherent motion diffusion weighted imaging predicts treatment outcome in nasopharyngeal carcinoma. *International Cancer Imaging Society Meeting and 18<sup>th</sup> Annual Teaching Course, 2019, Verona, Italy. (Second Prize)*.
6. **Ai QY**, King AD, Zhang H, Chen W. Repeatability of T1rho imaging in the head and neck. *ISMRM & SMRT Virtual Conference & Exhibition, 2020*.
7. Zhang H, **Ai Q**, et al. Bi-exponential T1rho relaxation calculation of parotid gland in vivo at 3T. *ISMRM & SMRT Virtual Conference & Exhibition, 2020*.

8. Wong LM, **Ai Q**, et al. Deep learning to discriminate nasopharyngeal carcinoma and benign hyperplasia on MRI. *ISMRM & SMRT Virtual Conference & Exhibition, 2020. (Magna Cum Laude Awards).*
9. **Ai QY**, So TY, Qamar S, Chen W, King AD. IVIM DWI of retropharyngeal lymph nodes: distinguishing benign change from metastases in nasopharyngeal carcinoma. *International Cancer Imaging Society Meeting and 18<sup>th</sup> Annual Teaching Course, 2019, Verona, Italy.*
10. **Ai QY**, Mo FKF, Poon DMC, Ahuja AT, Hui EP, Tong M, Ma BBY, Chan ATC, King AD. Extranodal spread is a predictor of poor outcome in nasopharyngeal carcinoma. *European Society of Head and Neck Radiology Annual Meeting and Refresher Course 2018, London, U.K.*
11. **Ai QY**, Chan JSM, Chan AKC, Woo JKS, Zee BCY, Chan ATC, Poon DMC, Ma BBY, Hui EP, Ahuja AT, Vlantis AC, King AD. Distinguishing early-stage nasopharyngeal carcinoma from benign hyperplasia using intravoxel incoherent motion diffusion weighted MRI. *European Society of Head and Neck Radiology Annual Meeting and Refresher Course 2018, London, U.K.*
12. Hui SCN, Wong SKH, **Ai QY**, Yeung DKW, Chu WCW. The Change of Adipose Tissues and Organ Fat-fraction in Patients with Morbid Obesity Before and After Bariatric Surgery. *ISMRM & SMRT, 2018, Paris, France.*
13. **Ai QY**, King AD, Mo FKF, Bhatia KS, Ma BBY, Kam MKM, Poon DMC. Staging head and neck cancer: which method should we use to measure nodal size? *European Congress of Radiology, 2017, Vienna, Austria.*
14. **Ai QY**, King AD, Law BKH, Wong LY, Bhatia KS, Ma BBY, Yeung DKW. Diffusion weighted imaging to predict distant metastases from nasopharyngeal carcinoma *ISMRM & SMRT, 2016, Singapore, Singapore. (Magna Cum Laude Awards)*
15. Yuan H, **Ai QY**, Kwong DLW, Fong DYT, King AD, Lee VHF, Khong PL. The use of imaging, PET/CT and MRI, for prognostication of patients with nasopharyngeal carcinoma. *Scientific Assembly and Annual Meeting of RSNA, 2016, Chicago, USA.*
16. Yuan H, **Ai QY**, Kwong DLW, Fong DYT, King AD, Lee VHF, Khong PL. Cervical nodal volume for prognostication and risk stratification of patients with nasopharyngeal carcinoma. *Annual Scientific Meeting of HKCR, 2016, Hong Kong SAR, PRC.*

## **Research grants**

### **Co-investigator**

1. **(On-going)** T1rho magnetic resonance imaging of nasopharyngeal carcinoma (January 2020 to December 2022). Funded by the Research Grant Council of the Hong Kong S.A.R. (HK\$:923,024)
2. **(On-going)** Magnetic Resonance Imaging Screening for Nasopharyngeal Carcinoma: Artificial Intelligence for Automatic Detection (January 2022 to December 2024). Submitted to the Research Grant Council of the Hong Kong S.A.R. (HK\$:1,125,732)