

# 农村上消化道癌早诊早治随访筛查顺应性影响因素分析

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**摘要:** [目的] 分析农村上消化道癌早诊早治随访筛查顺应性的影响因素, 探讨提高随访率的实现途径。[方法] 选取 2015 年 7 月至 2016 年 6 月需要接受随访筛查的随访对象 312 例, 应用随访筛查一般医学知识知晓调查问卷和基本信息调查表进行调查。采用  $\chi^2$  检验比较随访组与失访组基本信息的差异, 独立样本  $t$  检验比较随访筛查一般医学知识知晓得分上的差异。应用 Spearman 相关分析研究基本信息和随访筛查一般医学知识知晓得分与实现随访的相关性, 多元线性回归分析研究随访筛查顺应性影响因素。[结果] 回收有效问卷 312 份, 出自随访组 199 例, 失访组 113 例。检验分析结果表明, 随访筛查一般医学知识知晓得分、对上消化道癌早诊早治认知程度、文化程度、就业方式、居住状态、健康状况、家庭结构、有无癌症家族史、子女对上消化道癌早诊早治认知程度, 是随访筛查顺应性的影响因素 ( $P < 0.01$ )。[结论] 改进、创新随访筛查宣传发动的方式和方法, 提高随访筛查一般医学知识知晓率, 减少制约随访筛查顺应性的主、客观因素, 是解决早诊早治随访率不达标的关键。

**关键词:** 早诊早治; 随访; 癌前病变; 顺应性; 筛查; 上消化道癌

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## Factors Influencing the Compliance of Follow-up Screening for Early Diagnosis and Treatment of Upper Gastrointestinal Cancer in Rural Areas

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**Abstract:** [Purpose] To analyze the influencing factors of compliance of follow-up screening for early diagnosis and treatment of upper gastrointestinal cancer in rural areas. [Methods] A questionnaire survey on general medical knowledge about screening of upper gastrointestinal cancer was conducted from July 2015 to June 2016 among 340 subjects who were identified as high risk of cancer and planned to be followed further screening in rural area of Hebi city. The difference of basic information between the follow-up group and the missing follow-up group was compared through  $\chi^2$  test; awareness scores of general medical knowledge was tested through independent sample  $t$ -test. The correlation of the compliance of follow-up with the basic information, the general medical knowledge about follow-up and screening was assessed by Spearman's test, and the influencing factors of follow-up and screening compliance were analyzed by multivariable linear regression. [Results] Among 312 valid questionnaires, there were 199 subjects in the follow-up group and 113 in the missing follow-up group. The influencing factors of follow-up screening compliance included the awareness scores of general medical knowledge about follow-up and screening, cognition degree of early diagnosis and treatment of upper gastrointestinal cancer, education level, occupation, living condition, health condition, family structure, family history of cancer, and cognition degree of participants' children on early diagnosis and treatment of upper gastrointestinal cancer ( $P < 0.01$ ). [Conclusion] To improve the follow-up screening compliance it is necessary to upgrade and innovate the health education patterns and methods, to increase the general medical knowledge about follow-up and screening according to the relevant influencing factors among the residents in rural area.

**Key words:** early diagnosis and treatment; follow-up; precancerous lesion; compliance; screening; upper gastrointestinal cancer

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2006年WHO定性癌症是一种慢性疾病,其发生发展是一个长期多阶段过程。中国近十几年相关医学研究和临床实践证实,通过科学有效的技术方法,对人群进行筛查,能及时发现癌前病变及早期癌<sup>[1-4]</sup>。经过有效治疗,可以阻断癌前病变的发展和治愈癌症<sup>[4-6]</sup>。早诊早治已成为目前控制癌症的有效措施<sup>[7]</sup>。农村上消化道癌早诊早治项目是医改重大专项“慢性病防控”的重要内容,对初筛出的癌症高危人群给予随访筛查是早诊早治的主要任务之一,可逐步扭转我国医院以治疗中晚期患者为主的状况,是提高我国上消化道癌症患者5年生存率及降低死亡率的主要策略之一。由于失访多,随访率不达标是困扰早诊早治项目的突出问题,且长期、广泛存在。本研究以鹤壁市为样本,分析目前上消化道癌早诊早治随访筛查顺应性的影响因素,探讨解决随访率低这一瓶颈问题的新思路、新方法,为早诊早治随访决策提供理论依据,推动早诊早治惠民工程健康发展。

## 1 资料与方法

### 1.1 随访筛查对象的选择

农村上消化道癌筛查采取整体抽样的方法,以乡或村为单位对年龄40~69岁人群进行社会性初筛,及时发现癌前病变和早期癌,根据治疗原则进行治疗,符合随访原则的按照《癌症早诊早治项目技术方案(2011年版)》<sup>[4]</sup>(简称《技术方案》)要求及时随访。本研究选取经初筛后符合随访原则需要于2015年7月至2016年6月接受随访筛查的随访对象312例,排除有内窥镜检查禁忌证者,签署知情同意书。

### 1.2 方法

#### 1.2.1 调查工具

①随访筛查一般医学知识知晓调查问卷。根据随访筛查原则自行编制问卷,分随访事项和随访内容两个维度共6个条目,其中随访事项维度4个条目,随访内容维度2个条目,每个条目赋值0~2分,“知道”计2分,“不太知道”计1分,“不知道”计0分,分值越高,知晓度越高。问卷的Alpha系数0.926,内容效度0.804。

②基本信息调查表。调查表根据研究目的和研究对象特点自行设计,涉及性别、年龄、婚姻状况、有无子女、文化程度、对上消化道癌早诊早治认知程

度、就业方式、居住状态、健康状况、家庭结构、家庭人均月收入、有无癌症家族史、子女对上消化道癌早诊早治认知程度等信息。

③调查方法。深入目标乡村,在村干部或村医协助下召集村民现场发放随访筛查一般医学知识知晓调查问卷和基本信息调查表,向村民讲解调查的目的和填写注意事项。对文盲半文盲村民采用一问一答形式完成问卷,完成后现场收回。共发放问卷340份,回收340份,实际符合随访原则的有效问卷312份,有效回收率91.7%。

在随访对象入院随访筛查时,同样的随访筛查一般医学知识知晓调查问卷和基本信息调查表每人再填写一份。共发放问卷214份,回收214份。将其中实际完成随访筛查的199例列为随访组,不能完成随访筛查的15例以及符合随访原则的312例中其他未参加随访筛查的98例列入失访组。

#### 1.2.2 随访原则<sup>[4]</sup>

对食管轻度异型增生者每3年随访1次;中度异型增生者每年随访1次;重度异型增生/原位癌拒绝治疗者每年至少随访1次。

对贲门低级别上皮内肿瘤者每年至少随访1次;高级别上皮内肿瘤拒绝治疗者每6个月随访1次。

对重度萎缩性胃炎(CAG),或重度肠上皮化生(IM),或低级别上皮内肿瘤者每年至少随访1次;高级别上皮内肿瘤者应进行临床治疗,拒绝治疗者每6个月随访1次。

#### 1.2.3 随访率计算方法

随访率=(实际随访人数/应随访人数)×100%。

### 1.3 统计学处理

使用IBM SPSS Statistics 25进行统计学分析。计量资料用均数±标准差( $\bar{x} \pm s$ )表示,组间比较采用 $t$ 检验;计数资料用频数、百分比(%)表示, $\chi^2$ 检验;患者基本信息和随访筛查一般医学知识知晓得分与能否完成随访的相关性采用Spearman相关分析;随访顺应性影响因素分析采用多元线性回归分析,以 $P < 0.05$ 为差异有统计学意义。

## 2 结果

### 2.1 随访组和失访组随访对象基本情况

根据《技术方案》随访原则需要参加随访筛查

312 例,实际随访 199 例,随访率 63.78%;失访 113 例,失访率 36.22%。表 1(Table 1)结果显示,随访组与失访组在文化程度、对上消化道癌早诊早治认知

程度、就业方式、居住状态、健康状况、家庭结构、家庭人均月收入、有无癌症家族史、子女对上消化道癌早诊早治认知程度上存在差异( $P<0.05$ )。

**Table 1 Basic information of the follow-up group and the missing follow-up group**

| Item                                                                                                         | Number of samples | The follow-up group |                | The missing follow-up group |                | $\chi^2$ | <i>P</i> |
|--------------------------------------------------------------------------------------------------------------|-------------------|---------------------|----------------|-----------------------------|----------------|----------|----------|
|                                                                                                              |                   | Number of samples   | Percentage (%) | Number of samples           | Percentage (%) |          |          |
| Gender                                                                                                       |                   |                     |                |                             |                |          |          |
| Male                                                                                                         | 165               | 107                 | 64.85          | 58                          | 35.15          | 0.172    | 0.678    |
| Female                                                                                                       | 147               | 92                  | 62.59          | 55                          | 37.41          |          |          |
| Age groups(years)                                                                                            |                   |                     |                |                             |                |          |          |
| 40~49                                                                                                        | 36                | 21                  | 58.33          | 15                          | 41.67          | 1.772    | 0.412    |
| 50~59                                                                                                        | 128               | 87                  | 67.97          | 41                          | 32.03          |          |          |
| 60~69                                                                                                        | 148               | 91                  | 61.49          | 57                          | 38.51          |          |          |
| Marital status                                                                                               |                   |                     |                |                             |                |          |          |
| Married                                                                                                      | 298               | 190                 | 63.76          | 108                         | 36.24          | 0.002    | 0.968    |
| Unmarried/ widowed/ divorced                                                                                 | 14                | 9                   | 64.29          | 5                           | 35.71          |          |          |
| Whether the participant have children or not                                                                 |                   |                     |                |                             |                |          |          |
| With children                                                                                                | 307               | 197                 | 64.17          | 110                         | 35.83          | 0.418    | 0.518    |
| Without children                                                                                             | 5                 | 2                   | 40.00          | 3                           | 60.00          |          |          |
| Education level                                                                                              |                   |                     |                |                             |                |          |          |
| Illiterate                                                                                                   | 33                | 8                   | 24.24          | 25                          | 75.76          | 39.624   | <0.001   |
| Primary school                                                                                               | 162               | 96                  | 59.26          | 66                          | 40.74          |          |          |
| Middle school                                                                                                | 106               | 85                  | 80.19          | 21                          | 19.81          |          |          |
| High school and above                                                                                        | 11                | 10                  | 90.91          | 1                           | 9.09           |          |          |
| Cognition degree of early diagnosis and treatment of upper gastrointestinal cancer                           |                   |                     |                |                             |                |          |          |
| Prevention of cancer                                                                                         | 263               | 188                 | 71.48          | 75                          | 28.52          | 44.650   | <0.001   |
| Afraid of being checked out cancer                                                                           | 26                | 8                   | 30.77          | 18                          | 69.23          |          |          |
| Distrust                                                                                                     | 23                | 3                   | 13.04          | 20                          | 86.96          |          |          |
| Occupation                                                                                                   |                   |                     |                |                             |                |          |          |
| Farmer                                                                                                       | 158               | 125                 | 79.11          | 33                          | 20.89          | 32.573   | <0.001   |
| Migratory worker                                                                                             | 154               | 74                  | 48.05          | 80                          | 51.95          |          |          |
| Living condition                                                                                             |                   |                     |                |                             |                |          |          |
| Living in rural area                                                                                         | 219               | 149                 | 68.04          | 70                          | 31.96          | 5.757    | 0.016    |
| Removal/ immigration                                                                                         | 93                | 50                  | 53.76          | 43                          | 46.24          |          |          |
| Health condition                                                                                             |                   |                     |                |                             |                |          |          |
| Health                                                                                                       | 270               | 196                 | 72.59          | 74                          | 27.41          | 67.477   | <0.001   |
| With chronic disease at home                                                                                 | 33                | 2                   | 6.06           | 31                          | 93.94          |          |          |
| With injury and disease at hospital                                                                          | 9                 | 1                   | 11.11          | 8                           | 88.89          |          |          |
| Family structure                                                                                             |                   |                     |                |                             |                |          |          |
| Alone/ live with spouse                                                                                      | 212               | 161                 | 75.94          | 51                          | 24.06          | 42.620   | <0.001   |
| Live with children                                                                                           | 84                | 31                  | 36.90          | 53                          | 63.10          |          |          |
| Others                                                                                                       | 16                | 7                   | 43.75          | 9                           | 56.25          |          |          |
| Family monthly income(Yuan)                                                                                  |                   |                     |                |                             |                |          |          |
| <1000                                                                                                        | 91                | 45                  | 49.45          | 46                          | 50.55          | 13.663   | 0.003    |
| 1000~2000                                                                                                    | 79                | 50                  | 63.29          | 29                          | 36.71          |          |          |
| 2001~3000                                                                                                    | 72                | 52                  | 72.22          | 20                          | 27.78          |          |          |
| >3000                                                                                                        | 70                | 52                  | 74.29          | 18                          | 25.71          |          |          |
| Whether there is family history of cancer                                                                    |                   |                     |                |                             |                |          |          |
| No                                                                                                           | 253               | 147                 | 58.10          | 106                         | 41.90          | 18.680   | <0.001   |
| Yes                                                                                                          | 59                | 52                  | 88.14          | 7                           | 11.86          |          |          |
| Cognition degree of participant's children on early diagnosis and treatment of upper gastrointestinal cancer |                   |                     |                |                             |                |          |          |
| Unconversant                                                                                                 | 95                | 30                  | 31.58          | 65                          | 68.42          | 64.702   | <0.001   |
| Cognizant                                                                                                    | 149               | 110                 | 73.83          | 39                          | 26.17          |          |          |
| Familiar with                                                                                                | 68                | 59                  | 86.76          | 9                           | 13.24          |          |          |

2.2 随访组与失访组随访筛查一般医学知识知晓得分比较

随访组随访筛查一般医学知识条目 4、5、6 知晓得分明显高于失访组，经独立样本 *t* 检验组间差异有统计学意义 ( $P<0.01$ )。说明能否完成随访与一般医学知识知晓程度有因果关系，知晓得分越高，随访顺应性越高，见表 2(Table 2)。

2.3 基本信息和随访筛查一般医学知识知晓得分与能否完成随访的相关性分析

Spearman 相关分析结果显示，文化程度、对上消化道癌早诊早治认知程度、就业方式、居住状态、

健康状况、家庭结构、家庭人均月收入、有无癌症家族史、子女对上消化道癌早诊早治认知程度、随访筛查一般医学知识知晓得分与能否完成随访存在相关性 ( $P<0.05$ )，见表 3(Table 3)。

2.4 随访顺应性影响因素分析

以能否完成随访为因变量，以相关性分析具有统计学意义的指标为自变量，进行逐步回归分析，建立多元线性回归方程： $Y$ （能否完成随访）= $1.217+0.242\times(\text{文化程度})-0.136\times(\text{对上消化道癌早诊早治认知程度})-0.306\times(\text{就业方式})-0.115\times(\text{居住状态})-0.502\times(\text{健康状况})-0.095\times(\text{家庭结构})+0.733\times(\text{有无}$

Table 2 Comparison of awareness scores of general medical knowledge about follow-up and screening between the follow-up group and the missing follow-up group

| Question                                                                                                                                                           | The follow-up group<br>(n=199) |                             | The missing follow-up<br>group(n=113) |                             | <i>t</i> | <i>P</i> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------|---------------------------------------|-----------------------------|----------|----------|
|                                                                                                                                                                    | Number of<br>samples (%)       | Score<br>( $\bar{x}\pm s$ ) | Number of<br>samples (%)              | Score<br>( $\bar{x}\pm s$ ) |          |          |
| Do you know the dinner you have one day before the follow-up and screening have to be light?                                                                       | 170(85.43)                     | 1.81±0.04                   | 95(84.07)                             | 1.74±0.06                   | 1.022    | 0.308    |
| Do you know the follow-up and screening is not suitable for those who are anaphylaxis to iodine?                                                                   | 129(64.82)                     | 1.49±0.05                   | 68(60.18)                             | 1.38±0.08                   | 1.244    | 0.215    |
| Do you know the follow-up and screening is not suitable for those who have serious hypertension and diabetes?                                                      | 129(64.82)                     | 1.55±0.08                   | 71(62.83 )                            | 1.39±0.08                   | 1.815    | 0.070    |
| Do you know that it is forbidden to have anticoagulant drugs during the follow-up and screening period?                                                            | 169 (84.92)                    | 1.80±0.04                   | 70(61.95)                             | 1.42±0.08                   | 5.032    | <0.001   |
| Do you know that atypical hyperplasia intraepithelial neoplasia, severe atrophy and severe intestinal metaplasia of upper digestive tract are precancerous lesion? | 119 (59.80)                    | 1.50±0.05                   | 37(32.74)                             | 0.77±0.09                   | 8.122    | <0.001   |
| Do you know that intramucosal carcinoma and submucosal carcinoma of upper digestive tract are early carcinoma?                                                     | 117(58.79)                     | 1.48±0.05                   | 35(30.97)                             | 0.78±0.08                   | 7.717    | <0.001   |

Table 3 Analysis of correlation between the basic information,the awareness scores of general medical knowledge and the completion of follow-up

| Item                                                                                                         | <i>r</i> | <i>P</i> |
|--------------------------------------------------------------------------------------------------------------|----------|----------|
| Gender                                                                                                       | -0.024   | 0.679    |
| Age                                                                                                          | -0.025   | 0.658    |
| Marital status                                                                                               | 0.002    | 0.968    |
| Whether the participant has children or not                                                                  | -0.063   | 0.266    |
| Education level                                                                                              | 0.342**  | <0.001   |
| Cognition degree of early diagnosis and treatment of upper gastrointestinal cancer                           | -0.376** | <0.001   |
| Occupation                                                                                                   | -0.323** | <0.001   |
| Living condition                                                                                             | -0.136*  | 0.016    |
| Health condition                                                                                             | -0.463** | <0.001   |
| Family structure                                                                                             | -0.316** | <0.001   |
| Family monthly income                                                                                        | 0.202**  | <0.001   |
| Whether there is family history of cancer                                                                    | 0.245**  | <0.001   |
| Cognition degree of participant's children on early diagnosis and treatment of upper gastrointestinal cancer | -0.330** | <0.001   |
| Awareness scores of general medical knowledge about follow-up and screening                                  | 0.331**  | <0.001   |

Note:The dependent variable:whether there is follow-up;\* $P<0.05$ ,\*\* $P<0.01$

癌症家族史)-0.058×(子女对上消化道癌早诊早治认知程度)+0.630×(随访筛查一般医学知识知晓得分)。决定系数  $R^2=0.835$ ,模型拟合效果良好;回归效果检验  $F=198.131(P<0.001)$ ,回归分析模型有统计学意义,表明文化程度、对上消化道癌早诊早治认知程度、就业方式、居住状态、健康状况、家庭结构、有无癌症家族史、子女对上消化道癌早诊早治认知程度和随访筛查一般医学知识知晓得分,是随访筛查顺应性的影响因素( $P<0.01$ )。

### 3 讨 论

#### 3.1 目前医学界对农村上消化道癌癌前病变认知状况

癌前病变属于病理学概念,是指正常组织或其他病理改变更容易发生癌变或具有癌变倾向的一个特殊阶段的病变,属于浸润前阶段,如不及时治疗可能发展为浸润性癌<sup>[8,9]</sup>。目前,Correa等<sup>[10]</sup>提出的胃黏膜癌变模式得到普遍认可:正常胃黏膜—浅表性胃炎—萎缩性胃炎—肠化生—异型增生—胃癌。报道称,上消化道轻度异型增生癌变率为0~10%,重度异型增生癌变率为63%~100%,它们有自发和干预逆转的共性,如能给予药物或环境因素干预则可能促使其逆转分化,从而达到预防食管癌的目的<sup>[11]</sup>。因此,加强上消化道癌癌前病变人群的随访工作是实现我国癌症二级预防的重要手段。

#### 3.2 农村上消化道癌早诊早治随访现状

《癌症早诊早治项目(农村)工作报告》2013/2014、2014/2015、2015/2016、2016/2017年度报告显示<sup>[12]</sup>,上消化道癌早诊早治项目首次筛查与随访筛查数据比较,随访筛查的病例检出率与早诊率分别比首次筛查高81.13%和30.20%、91.15%和27.84%、85.12%和26.45%、79.17%和25.71%;全国项目点平均随访率分别为58.40%、67.21%、65.86%、63.61%。2013年7月河南省肿瘤防治研究办公室编印的《河南省上消化道癌早诊早治2012/2013年度工作简报》报告,随访对象的平均2年进展癌检出率为5.62%,早期癌病例超过90%,显著高于首次筛查。2016年9月8日至11日“癌症早诊早治中国行——2016年上消化道癌早诊早治项目培训班”在河南省鹤壁市举办,来自陕西、广西、广东及河南等地区的26个项目点项目管理人员就2015至2016

年工作进行了汇报与交流并形成共识:随访工作难度大,随访率低,普遍不能达到项目《技术方案》要求随访率 $\geq 70\%$ 的目标<sup>[4]</sup>。

#### 3.3 随访组与失访组随访筛查一般医学知识知晓度比较

表2(Table 2)结果显示,条目1、2、3随访组与失访组随访筛查一般医学知识知晓得分差异无统计学意义( $P>0.05$ ),条目4、5、6随访组知晓度显著高于失访组,组间差异有统计学意义( $P<0.01$ )。究其原因失访对象对随访知识和随访目的认识不足,特别是在何为癌前病变、早期癌,为何要随访等方面知晓率低。说明随访宣讲不到位,需要加强和改进随访知识传播,促成随访对象正确认识疾病、充分认知并积极主动参与随访,是提高随访筛查顺应性的根本策略。

#### 3.4 随访筛查顺应性的影响因素分析

相关分析与回归分析结果显示,婚姻状况、有无子女、家庭人均月收入、性别、年龄,不是随访顺应性的影响因素( $P>0.05$ )。农村上消化道癌筛查是国家免费的惠民工程,不受结婚与否、有无子女与家庭收入高低的影响。相比以往的首次筛查高危人群依从性研究<sup>[13]</sup>,随访对象的性别、年龄和检出的病理分型是已知的,因此不是影响随访顺应性的主要因素。能否完成随访受文化程度、对上消化道癌早诊早治认知程度、就业方式、居住状态、健康状况、家庭结构、有无癌症家族史、子女对上消化道癌早诊早治认知程度、随访筛查一般医学知识知晓度的影响。

调查发现,40~49岁女性以初中文化程度为主,50~69岁女性以小学文化程度和文盲为主,40~59岁男性以初中文化程度为主,60~69岁男性以小学文化为主。受文化程度等限制,对随访筛查意义的理解和接受程度低,是随访对象失访的主观因素。60~69岁年龄段组心脑血管病、糖尿病等慢性病发病增多,造成筛查禁忌证增多而失访。近年来城镇化进程加快,房屋拆迁引起居住状态和家庭结构发生变化,造成随访对象迁移、失联而失访增多。随访对象对随访筛查一般医学知识知晓度和对上消化道癌早诊早治认知程度、有无癌症家族史、子女对上消化道癌早诊早治认知程度,构成随访对象整个家庭对待随访的态度。有癌症家族史、子女对早诊早治认知程度高的家庭,则随访对象随访顺应性高,失访率也低。

随访对象随访筛查顺应性低是农村上消化道癌提高早诊早治检出率、降低发病率和死亡率的制约因素。随访对象对早诊早治的认知程度和对随访筛查一般医学知识的知晓度,是影响农村上消化道癌早诊早治随访筛查顺应性的关键因素。当前新型工业化、城镇化带来的农村人口生产、生活方式的加速变迁,对巩固、提高随访对象的顺应性提出了巨大挑战。引入“叙事医学”宣讲方式,发挥信息化支撑作用,借助新的通联手段,在传统的“人—人”宣传发动的基础上加快构建面向随访对象的“人—网”快捷沟通、即时答疑工作机制,同时注重发挥随访对象子女的正面作用,让随访对象真正认识早诊早治的重要意义、掌握随访筛查的一般医学知识,应该成为提高随访筛查顺应性的重要抓手和关键突破口。

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