INPLASY PROTOCOL

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None declared.

Extended Investigation on the connection of TP73 G4C14-A4T14 Polymorphism with different Cancer Types – An Updated Meta-analysis with 56 Case-control Studies

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Review question / Objective: **TP73 G4C14-A4T14 variant has been suspected of elevating the risk of cancer for many years. The available evidence was unsatisfactory and could not provide a reliable conclusion. Therefore, we performed this meta-analysis to re-evaluate the previous findings and illustrate the actual role of TP73 G4C14-A4T14 variant on cancer development.**
Condition being studied: **The association of the G4C14-A4T14 variant with cancer risk was studied.**
Information sources: **PubMed, Google Scholar, EMBASE, Cochrane Library, and Web of Science, CNKI.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 January 2022 and was last updated on 14 January 2022 (registration number INPLASY202210070).

INTRODUCTION

Review question / Objective: **TP73 G4C14-A4T14 variant has been suspected of elevating the risk of cancer for many years. The available evidence was unsatisfactory and could not provide a reliable conclusion. Therefore, we performed this meta-analysis to re-evaluate the previous findings and illustrate the actual role of TP73 G4C14-A4T14 variant on cancer development.**

Rationale: **As the published articles showed conflicting outcomes regarding the association of G4C14-A4T14 variant with cancer, an exclusive meta analysis has been performed with 56 case control studies to confirm the link between this variant and cancer.**

Condition being studied: The association of the G4C14-A4T14 variant with cancer risk was studied.

METHODS

Search strategy: The searched terms included: 'TP73 or p73', 'Cancer or tumor', 'G4C14-A4T14 polymorphism', 'rs2273953 and rs1801173', 'TP73 polymorphism and cancer', 'association between TP73 G4C14-A4T14 polymorphism and cancer'.

Participant or population: Global population.

Intervention: Association of polymorphism was detected as Odds ratio with 95% confidence interval.

Comparator: Different genotypes and allele frequency of cases were compared with controls.

Study designs to be included: Case control studies with the respective genotyping data of the mentioned SNP.

Eligibility criteria: Case control studies with the respective genotyping data of the mentioned SNP.

Information sources: PubMed, Google Scholar, EMBASE, Cochrane Library, and Web of Science, CNKI.

Main outcome(s): This comprehensive meta-analysis provided firm evidence that TP73 G4C14-A4T14 variant significantly elevates the overall cancer risk. More specifically, Caucasian, African, and hospital-based populations hold higher risk. Again, G4C14-A4T14 variant predisposes gynecological, colorectal, oral, head and neck, and other cancers risks.

Quality assessment / Risk of bias analysis: The quality of the included studies was assessed using the Newcastle-Ottawa Scale (NOS) score. Publication bias was analyzed with Egger's test and Begg & Mazumdar's Test.

Strategy of data synthesis: RevMan 5 was used to perform the meta analysis. The intensity of the cancer risk was estimated as odds ratio (OR) with 95% CIs (confidence interval), and significance level (Pz) was set to Pz<0.05. Both the fixed-effects model and random-effects model were applied based on heterogeneity (Q-test). When heterogeneity was significant (PH <0.10), the random-effects model (DerSimonian-Laird) was applied, and when heterogeneity was non-significant, the fixed-effects model (Mantel-Haenszel) was applied.

Subgroup analysis: Subgroup analysis was performed based on ethnicity and cancer types.

Sensitivity analysis: A sensitivity analysis was performed.

Language: Manuscript was written in English but there was no language restriction for literature search.

Country(ies) involved: Bangladesh.

Keywords: TP73; G4C14-A4T14; Polymorphism; Cancer; Meta-analysis.

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