Survival of Oral Bacterial After X-rays Diagnosis

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INTRODUCTION

The most widely recognized microorganism related with a dental cavity is the mutant's streptococci, most noticeably lactobacilli and streptococcus mutant. However, pathogenic bacteria are available in dental carries, yet they are generally lower count to causes trouble except if there is a shifting in the balance1. This is driven by nearby natural changed, for example, visit sugar, no biofilm visible (an absence of tooth brushing)².

In the event that the left untreated, the sickness can cause pain, tooth misfortune and disease³. Expansion to, the mouth contains a wide of oral microbes, however just a few species of bacteria are accepted to cause dental carries, for example, Streptococcus mutant and Lactobacillus species among them. These organisms can deliver lactic corrosive in high amounts, after fermentation dietary sugars and are...
impervious to unfavorable impacts of acidic pH, properties basic for cariogenic bacteria. The cemented of root surfaces appear to be high effectively dematerialized than enamel surfaces, a more extensive assortment of bacteria can cause root problem, including Actinomycetes spp., Lactobacillus acidophilus, Streptococcus mutans and Nocardia spp. Microbes are combined around the teeth and gums in a sticky, rich creamy cluster called plaque, which fills in as a biofilm. A few locales gather plaque more regularly than others, for instance, destinations with a low rate of a salivary stream (molar crevices).

X-Ray is a type of electromagnetic range like light rays, then again, actually they are more energetic than light rays and are undetectable to the human eye. The wavelength of X-rays have a arranging 0.01 to 10 nanometers, relating with the frequency in the range 30 pet hertz to 30 hexa-hertz (3×1016 Hz to 3×1019 Hz) and energies ranged 120 eV to 120 keV. X-ray goes effectively through air and delicate tissues of the body. The dosages of radiation got in most X rays are very like the natural (background) radiation one is presented to just by living on Earth. X-ray is unnecessary to be kept away from, as a rule, the advantages significantly exceed the conceivably little-expanded danger of introduction.

X-ray is prominent and utilized by dental practitioners since considering finding when the procedure of dental treatment. Used dosage is due to dental X-rays actually relying upon the strategy and the technology. As of late, an investigation came about those bacterial checks after medicines showed a direct association with the total count of microorganisms previously medications just as the rate enduring microbes and illumination time. Whatever allot of bacteria found in human mouth, which could be changed their reaction to anti-toxins by physical energy. The reason for the present work was to appraise the impact of dental X-Ray on oral microbes and their reaction to some antibiotic responses. The rate of conversion in bacteria to fewer concentrations of antibiotic. As far as the antibiotic defuses in culture media, the concentrations of the antibiotic being less. So, the more positive sense of bacteria means the sensitivity of bacteria to fewer concentrations of antibiotic.

Wether bacteria have a very small genome, so they make a target for either cell killing or mutations during diagnostic doses of X-ray. Additionally, the subculture has done for the mutant isolated bacteria after three days. The result of cultivation was suggested flexibility of bacterial nuclear mutation. While other fifty percent of Staphylococcus 8 isolates were resistant to the entire tested antibiotic (VA, C, CIP, AX and Te) before radial exposure, while after radiations were changed to sensitive (100%), Table 2.

Table 2: Response of resistant bacteria to antibiotics before and after exposure to X-ray.

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MATERIALS AND METHODS

Randomly 30 patients collected from whom referred to Erbil dental college. Dental examples were taken by sterile cotton sticks when exposure to X-ray (OPG and Probe model or film-based framework). Cultivation in brain heard stock media. Total viable bacterial cell counts done before and after radiations were finished by sequential dilution with sterile normal saline (0.9%) by spreading on supplement nutrient agar culture. Then the cultures were incubated for 24 hr. at 37°C, and the cells were listed later. The viable bacterial cell estimated at 600 nm utilizing spectrophotometer. Cultivation on Blood and MacConkey agar. Isolation, identification and sensitivity test of bacteria.

RESULTS

Table 1 prescreening of referenced patients contamination dental isolates were Gram-positive Staphylococcus, Strep. species and E.coli 16, 16 and 6 respectively.

Table 1: Isolated bacteria and their response in percent against antibiotics.

### Table 1: Isolated bacteria and their response in percent against antibiotics.

<table>
<thead>
<tr>
<th>Isolated bacteria</th>
<th>Number of isolates</th>
<th>Sensitivity against antibiotics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before exposure</td>
<td>After exposure</td>
</tr>
<tr>
<td>Staph. species</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 R (50 %)</td>
<td>8 S (50 %)</td>
</tr>
<tr>
<td></td>
<td>8 S (50 %)</td>
<td>8 S (50 %)</td>
</tr>
<tr>
<td>Strep. species</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 R (50 %)</td>
<td>2 S (25 %)</td>
</tr>
<tr>
<td></td>
<td>8 S (50 %)</td>
<td></td>
</tr>
<tr>
<td>E.coli</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 S (50 %)</td>
<td>1 S (33.3 %)</td>
</tr>
</tbody>
</table>

Results of sensitivity tests for isolates bacterial against used antibiotics showed variable responses. Near fifty percent of isolated Staphylococcus 8 isolates were resistant to the entire tested antibiotic (VA, C, CIP, AX and Te) before radial exposure, while after radiations were changed to sensitive (100%), Table 2.
It was seen that cell count in suspensions didn’t bring lower regardless of a critical decrease in the reasonable bacterial counts from \(8 \times 10^8\) to \(6 \times 10^8\) CFU/ml. As a result of the way that the treated cells in which they didn't totally lyse not withstanding when they were inactivated by radiation, so the cell thickness didn't diminish. Outcomes likewise concurred with other specialist groups in Korea\(^{13}\). But not agree on the results of other researcher data\(^{14}\). Those indicate that exposure of bacteria to X-ray radiation does not change the test organisms’ antibiotic susceptibility profiles, nor adjust genomic DNA profiles of bacteria.

**Discussion**

The X-rays are very active corrupt large molecules by cracking the bonds between molecules and atoms\(^{12}\). While the DNA is important contains the cell, which contains the code needed for the cell to carry out biological processes\(^{5}\). So when the DNA is affected and intermittent bonds between these atoms in the large molecules, maybe you get partially or completely an incomplete structure\(^{5}\). The result which will perform a different function and die the organism or change occurs in the biological processes of the bacterial cell\(^{13}\). Therefore, the X-ray diagnosis of health safety should be observed.

**Conclusions**

Results of this study concluded that the dental diagnoses utilizing X-ray diagnosis must be influenced by viability of oral bacterial and Gram-positve microbes were showed higher mutant than Gram-negative bacteria.

**REFERENCES**