

Table 1: Summary of studies on dental implant placement in ectodermal dysplasia (ED) patients

No.	First author	Age (year)	Gender	Extraoral findings	Intraoral findings	Radiographic findings	Type of ED	Used techniques
1	Grecchi (10)	38	F	Typical ED form of face and skin annex	Two lateral incisors, two canines, one right premolar, and one molar (all in the mandible)	NM	Hidrotic	Implant insertion (12 fixtures) + immediate loading
2	Kilic (17)	6	M	The characteristic features of ED syndrome, including hypotrichosis, prominent forehead, flat nose, thick lips, prominent chin, and sparse hair and eyelashes	An edentulous mandible and a maxilla with two first molars with severe alveolar ridge atrophy	Two unerupted second maxillary molars and advanced alveolar bone resorption	Hypohidrotic	A maxillary removable partial prosthesis and a mini-implant-retained mandibular overdenture
3	Knobloch (15)	9	M	NM	The absence of the majority of the permanent dentition	Absence of the majority of the permanent dentition	Hypohidrotic	A mandibular fixed dental prosthesis supported by dental implants and a maxillary removable dental prosthesis
4	Cezaria Triches (12)	8	F	Light-colored, thin, and dry hair, thin and sparse eyebrows and lashes, dry skin, prominent lips, senile appearance	Congenital absence of several primary and permanent teeth, microdontia, phonetic alteration, chewing difficulties, and upper labial hypertrophic frenulum	Congenital absence of several primary and permanent teeth and tooth buds, deficient root development, and large pulp chambers	NM	Maxillary denture and mandibular implant-supported fixed prosthesis
5	Bayat (18)	18	M	NM	Severe hypodontia, dry mucosa, loss of vertical dimension, underdeveloped	Severe maxillary and mandibular hypoplasia	Hypohidrotic	Seven implants in the maxilla and seven implants in the mandible

					alveolar ridges, and Class III jaw relationship			+ a screw-retained metal-ceramic fixed partial denture
6	Wu (2)	21	F	Sparse hair, enlarged forehead and chin, "saddle" nose, periocular hyperpigmentation, wrinkling, and protuberant lips	Edentulous mandible and maxilla	Severely atrophied alveolar bone in the maxilla and the mandible	NM	Use of zygomatic implants and conventional implants as bases for bone augmentation
		19	M					
7	Rajan (1)	26	F	NM	Extensive bone loss around the supporting abutment teeth	Extensive bone loss around the supporting abutment teeth; both the maxillary and mandibular ridges were severely atrophic	NM	A fixed prosthesis immediately loaded on four zygomatic implants
8	Stern (4)	31	F	Small lips, depressed nasal bridge, a concave facial profile, hypotrichosis, periocular hyperpigmentation, and fingernails that were thick, abnormally shaped, discolored, rigid, and brittle	Small maxillary and mandibular arches, oligodontia with retained deciduous teeth, mild generalized gingivitis, caries, and failing maxillary and mandibular crown and bridge restorations	Alveolar atrophy with sinus pneumatization and congenitally missing teeth	Hypohidrotic	Fully implant-supported fixed prosthesis using immediate implants and narrow-diameter implants
9	Koyuncuoglu (11)	22	M	Fine, sparse, and thin hair, scant eyelashes and eyebrows, frontal bossing, a depressed nasal bridge, protuberant lips, a prominent chin, and a resultant concave facial profile	All permanent teeth were missing, except for the maxillary central incisors and mandibular right canine, increased vertical dimension of occlusion	NM	Hypohidrotic	An implant tooth-supported telescopic partial denture at the mandible and a tooth-supported telescopic partial denture at

								the maxilla
10	Dhima (9)	17	M	Sparse hair, intolerance to light, hypodontia, and maxillary hypoplasia	Severe maxillary hypoplasia, hypodontia, velopharyngeal insufficiency, non-restorable caries, and generalized moderate periodontitis	The need for significant anterior and vertical advancement	NM	Mandibular implant-retained fixed prosthesis and a maxillary implant-retained detachable prosthesis
11	Priya (16)	22	F	The patient's facial skin was dry and soft, increased thickness of fingernails	Missing teeth with generalized microdontia	Presence of retained primary teeth in both arches	Hypoanhidrotic	Implant-retained fixed partial denture
12	Ghoveizi (8)	19	F	Frontal prominence, mild Angle Class III jaw relationship, and prominent lips	Absence of the majority of the permanent dentition, loss of vertical dimension of occlusion	Enlarged pulp chambers in all permanent molars, narrow and short roots in all first premolars	Hypohidrotic	Eleven implants placed in the maxilla and the mandible with metal-ceramic implant-supported fixed prostheses
13	Al-Ibrahim (3)	15	F	Dry and pale skin, no body hair on arms or legs, hyperpigmentation and linear wrinkles around the eyes, protuberant lips, and depressed nasal bridge	Underdeveloped maxillary ridge with minimal height and width, a prognathic mandible, macroglossia, oligodontia, malformation of the permanent teeth, and hypoplastic enamel	NM	Hypohidrotic	Maxillary tooth-supported fixed detachable telescopic prosthesis and implant-supported mandibular fixed partial denture
14	Moshaverinia (26)	24	M	NM	Missing of most of the permanent dentition	NM	NM	Maxillary and mandibular implants to support fixed metal-ceramic prostheses
15	Jain (27)	11	M	Sparse hair, frontal bossing,	Absence of saliva and dry	No evidence of any impacted	Hypohidrotic	Maxillary flexible

				depressed nasal bridge, prominent supra-orbital ridges, sunken cheeks, hyperpigmented skin around the eyes, protuberant lips, and decreased lower facial height	oral mucosa, cone-shaped teeth, and underdeveloped edentulous mandibular alveolar ridge	tooth		removable partial denture and mandibular conventional complete denture
16	Kramer (37)	8	M	Thin, sparse, and blond hair, and sparse eyelashes and eyebrows	Severe hypodontia	NM	Hypohidrotic	Early insertion of dental implants at the age of 8 years

M=Male, F=Female, NM=Not Mentioned